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Developing Measures and Predictors of Observation and Inference Abilities

Richard J. Orend, Richard D. Rosenblatt,
Marsha J. Michaels, Myron A. Rimm, and
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Personality Assessment System (PAS)

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I. INTRODUCTION

The perceptual and cognitive operations involved in making observations and drawing inferences from those observations are extremely complex. For this reason the construction of stimulus settings which examine these operations and the development of instruments which can predict who will most effectively perform these operations, require a careful formulation of the problems inherent in these undertakings. In this paper we outline a research design which furnishes a definition of these problems, offers a procedure for their solution, and describes the results of research conducted within this framework.

The general approach to developing adequate stimulus settings has been discussed in the previous studies conducted under this program.* In that research the focus was on developing the settings and standardizing their application. To that end, three short films were used to establish "standardized settings," and procedures for determining criteria and scoring observers (I.O.E.) were produced. However, these results still leave unclear the questions of "efficiency of observations in applied settings" and whether or not people who score high on these criteria are "good observers" in any other setting, particularly the interpersonal setting.

The question of "applied settings" can be answered finally only in field tests. However, it is possible to expand the number of experimental settings used in order to provide a better indication of the generalizability of observational abilities. At a minimum, this expansion should include both the observing bystander and the active participant roles. This should be done not simply in the interst of a broader empirical base

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* "Developing the I.O.E.," Unpublished paper, August 1974.

but because there may be some qualitative differences between the observational abilities demonstrated in these two areas.*

The program we conducted expands the stimulus settings by including a broader bystander stimulus and by devising a vehicle to put observational and inferential behavior in an interpersonal setting (namely, a small group discussion). It maintains the general objective of the previous research in that we attempt to build a standardized vehicle for judging observational, as well as inferential, behavior. The number of stimuli and the capability to use the same stimuli for observation and for inference will be included in this analysis, whereas they were treated separately in the previous effort.

Attempts were also made to relate observational abilities to other variables in the previous research. This was part of an effort to provide both a direct and an indirect means of measuring observational effectiveness. This endeavor was unsuccessful, largely, we feel, due to the failure to provide any kind of a theoretical setting for the analysis. Thus, a "shotgun" was applied in this important linking effort. Tagiuri describes previous efforts to relate various theoretical approaches to the quality of personal perception.** His analysis leads to the conclusion that cognitive style or complexity has shown the greatest amount of promise as a predictor of effective observation of or inference about other people.***

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* Tagiuri, Renato, "Person Perception," in Lindzey, Gardner and Arouson, Elliot, The Handbook of Social Psychology Vol. III (Reading, Massachusetts: Addison Wesley, 1968), pp.395-449. Much of our discussion on the requirements of useful studies of interpersonal observation is drawn from or supported by this excellent literature summary.

** Ibid.

***At this point we will not present a rigorous analysis of the link between cognitive complexity and observational/inferential ability. That is available in Orend, Richard J., "Observation, Inference, and Cognitive Structure," HumRRO Special Report ED-75-23. But, a brief description of how we

Our objective, however, was not to validate a theory, but to develop means for measuring observational and inferential abilities, and to identify the best predictors of those abilities. To that end we developed a multi-measure, multi-trait research study designed to help resolve those problems. The research described herein is the result of that effort. The conduct of this research followed as closely as possible the approach and methodology described in our original proposal.

The remainder of this paper will be devoted to a description of the approach and methodology used in the study and the presentation of research findings in three areas: 1) the development of observation and inference test instruments; 2) the identification of inference and observation abilities in individuals and the relationship of those capabilities to other individual characteristics; and 3) a special examination of the relationship of observation and inference capabilities, and cognitive complexity level to PAS personality types. Before beginning this description, however, we will present the basic objectives of the study as they were developed during the early stages of the project.

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approached this problem in the earlier paper is in order prior to turning to the details of the technical proposal. Essentially, the level of complexity exhibited by an individual is indicative of the amount of information he needs to process about a particular situation. Thus, the higher the complexity, the greater the information need and the greater the information processing capability. It follows that an individual of high complexity would be a better observer because of greater need for information and a better inference drawer because of a greater capacity to relate and draw conclusions from the information observed. It is also possible to separate the good observer without inference skills from the good observer with inference skills, thus completing the model of possible types. In this case the highly differentiated subject would be a good observer, but would not necessarily be able to make accurate inferences if he were not also highly integrated. The complexity model is not as simple as it has been portrayed here, but it operates generally within this framework. Unfortunately, depsite offering the best theoretical possibility for an indirect measurement of observational and inferential abilities, our findings do not offer much support to these hypotheses.

II. OBJECTIVES

As a result of the considerations discussed in the introduction, the following objectives were developed for this study:

A. Determine which individuals possess greater observational abilities in nonpersonal and in interpersonal situations, and determine the relationship between observational abilities in those situations.

B. Determine which individuals possess greater inferential abilities in nonpersonal and interpersonal situations, and determine the relationship between inferential abilities in these two areas.

C. Examine the empirical relationships between observational and inferential (including behavior prediction) capabilities of subjects in this research.

D. Determine if "focusing" in interpersonal situations is related to increased observation and inference.

E. Identify variables which may serve as predictors of good observation and inference skills, and test for the extent to which they differentiate good from poor observers and inferrers.

F. Discuss the theoretical role of cognitive complexity in inference and observation behavior.*

These objectives represent the scope of the research plan as it was originally specified in the proposal and its addendum. In the explication of the approach and methodology used in the study it will be apparent that the conduct of the study and the analysis of the data are somewhat more elaborate than is implied by these objectives. This is particularly true

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*This was done in detail in HumRRO Special Report ED-75-23, submitted in August 1975, and will not be repeated here.

of objective E. where a substantial attempt was made to locate signifi-

cant predictor variables and measure their impact on the criteria variables.

III. APPROACH

Given our objectives, the primitive state of conceptualization about the predictors of accurate observation and inference, and limited information about the situations we were trying to simulate, it was determined that multiple measurements of observation and inference should be used, and that a wide variety of potential predictor variables should be tested. Thus, our overall approach to this research problem was (1) to create stimulus settings which reflected real-life situations, while maintaining some control over these events to insure comparability of outcomes; (2) to develop instruments to measure observation and inference abilities; (3) to identify as many potential predictors of these skills as possible; and (4) to provide a stimulus film for alternative measurement sources and as a possible indicator of relevant skills.

The basic elements of the sponsor-described observation and inference tasks were (1) that the applied setting conditions allow only a limited exposure to the stimulus, and (2) that the observer not have control over the content of that situation and, therefore, base inferences only on available information. Our efforts to reproduce this environment resulted in the selection of four-person groups as the primary vehicle for providing stimulus settings, in which subjects had the occasion to observe three other people as they discussed topics of their own choosing.

Since topics were selected by group members and all participants were aware they would later respond to observation and inference questionnaires, there was opportunity to pursue a particular group member in order to broaden the basis for later responses. However, as the subjects were not aware of the exact nature of observations and inferences to be made, they were not able to pursue specific interests related to subsequent questioning.

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This limitation has a counterpart in applied settings where the observer, although aware from the beginning of the kinds of inferences necessary, probably has less control over the topic and direction of interaction than did our subjects. Nevertheless, the lack of an exact target for inferences was undoubtably a hindrance in drawing accurate conclusions and may have influenced our success in identifying types of people able to infer well in applied settings.

As part of our effort to overcome setting limitations, we included multiple measurements of observation and inference, two for the former and three for the latter. The key to this approach was a testable assumption that observational and inferential tasks were related across settings, and that if this condition prevailed in our data, the limitations of our experimental settings could be at least partially countered. In this case we used observations of a film and of individuals in the small group as the two stimulus conditions. For inference we tested for behavioral inferences about individuals in the film and in the small group, and for inferences about self-perceptions of the group participants. A final distinction of both observation and inference was between focussed and unfocussed subjects in the group setting. This procedure added another dimension to the situational sets by providing for a test of differences involving one or several stimuli in the same setting.

For predictor variables a similar approach was taken, but selections were made on a somewhat less systematic basis. Our concern was to include all types of variables which might be useful predictors of observation and inference skills. We also made some variable selection on the basis of potential theoretical significance, i.e., the cognitive complexity scales, and some on the basis of sponsor preference, i.e., the PAS and a paper-and-

pencil personality inventory. These predictor variables were added to demographic and SES variables to form the basic set of indicators. This "shotgun" approach was probably beneficial, however, in the face of a lack of substantial theoretical or empirical results in previous research and given the interests of the sponsor in finding the best predictors of inferential skills regardless of the causal path between skill level and predictor. Our analysis procedures also reflect that interest.

By using the same subjects in both film and small group conditions, it was possible to test for the interaction of observation and inference scores both within and between stimulus settings. Thus, if inference and observation skills were related, it would have been possible to identify that relationship for use as an indication of the transferability of skills (and thereby increasing the credibility of our design) and to use the film results as predictors of interpersonal skills. This unfortunately was not the case. (See page 79, Section VI, for results.)

A final general consideration in our approach to this project was the selection of subjects, who, ideally, should have been agency operatives. Since this was not possible, we sought out subjects who were easily obtainable and who matched operatives as closely as possible. Given certain limitations on the use of other government employees, we finally settled on college students, who resemble operatives in educational and probably some socio-economic characteristics, and a smaller group of insurance salesmen and executives, who need observation and inference skills in interpersonal settings which might roughly parallel those of an operative, in form if not in content. Of course, selection of subjects was limited by the willingness of organizations to allow use of their facilities and tapping of their population resources. In any case, these

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two groups did show some significant differences in observational and inferential skills, a possible indication of the effects of job requirements on the development of certain kinds of skills not necessarily present or normally used.

It is useful at this juncture to specifically enumerate some of the limitations of our approach, the most significant of which is the fact that we are not operating with a truly experimental format. There are several aspects of the testing situation which are not under direct control and therefore are subject to unavoidable and untraceable confounding. This is by design, due to our objectives, but it is noteworthy because it could lead to conclusions about the potential contributors which are clouded by the lack of control exercised over the procedures. Our statistical approach to analyzing these data is an attempt to partically overcome this problem.

A second limitation to our approach is that observation and inference scale scores and predictive analyses based on those scores are conducted using the same subjects. Although inclusion of scale items is not dependent on external validity criteria (i.e., we use only a test of item documentation), there remains a problem of non-independence of the samples. Nor were we able to apply standard remedies for this situation, e.g., randomly dividing subjects for scale construction and validation phases, because the N was too small to allow use of multivariate analysis techniques during the validation phase. However, because of the procedures used on constructing scales, i.e., essentially elementing only those items which do not discriminate between high and low scores, the lack of independence should provide minimal bias to the final outcome.

Finally, our objectives did not include the testing of specific theoretically-derived hypotheses. We are primarily interested in identifying the best predictors and only secondarily interested in explaining why our results occurred as they did. This restriction of interests reduces the impact of the previously-mentioned design problems because it calls for less stringent assumptions.

IV. METHODOLOGY

In this section we shall describe the organization of the data collection, the development of the testing instruments, and the selection of subjects. A detailed description of the testing procedures is contained in Appendix A.

The general procedures used in this project were as follows:

(1) Paid volunteer subjects at two locations were given a battery of tests, including instruments measuring cognitive complexity level, personality characteristics, and previous behavior in a wide variety of situations. This constituted Phase I of the study.

(2) From this group of approximately 260 subjects we selected those who were to return for the second phase of the research. The selection was made primarily on the basis of availability, that is, everyone who was willing (there were fewer than ten refusals) and able to meet scheduling requirements was asked to return for the second session.

(3) During Phase 2, subjects viewed a film featuring two people in actualization group session, then responded to questions about what happened in the film (observation) and about the behavior of the two main characters outside the context of the film (inference).

(4) Phase 3 consisted of a one-hour, small group session during which subjects discussed a topic of their choice. Following these sessions, subjects were asked questions about the characteristics of other group members (observation) and behaviors they might have engaged in outside the group context (inference).

(5) Following Phase 3, subjects were paid ($13 each) and asked to attend the debriefing period held at the end of all group sessions.

The Sample: Subjects originally tested in Phase I were either students
at a major Southern university (N = 188)* or individuals with some connec-
tion with the insurance business, mostly salesmen, from the Philadelphia
area (N = 49)* The students were solicited by newspaper and poster adver-
tising and a promise of up to $13 for their trouble (for participation in
all three phases)** The insurance people were solicited by letter using
the letterhead of a school they had all attended. The same reward was
offered for their participation, although they had to exhibit a somewhat
stronger motivation to attend since the distances to the testing location
were much greater.

The student sample was relatively equally divided between men and
women, 46% to 54%. Only 14% of the insurance people were women.

Selection of subjects for participation in Phases II-III was done on
the basis of availability: everyone who was willing, able to come at a
specified time (a morning, afternoon or evening in a one-week period) and
could be scheduled with at least three other subjects of the same sex, was
asked to return. This last criterion created the greatest difficulties
and caused the largest loss of subjects. Within that framework, subjects
were randomly assigned to four-person groups for participation in Phase III.
(Phase II required no groups.)

Of 188 students, 160 participated in the small-group segment of the
study. These were divided into 21 female groups and 19 male groups. Of
49 insurance people, 28 participated in the small-group discussion, and

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* The N equals the number who completed testing in Phase I. Several
others did not complete the testing and were dropped from the sample before
data was processed.

** Those participating only in Phase I were paid $5. Phases I and II-III
took approximately the same length of time. The difference in payments,
$5 versus $8, was used to help maintain interest in returning. Even with
a reward of $13, however, the turnout of students was somewhat lower than
we had expected.

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only one of the seven groups was composed of women. Thus, the final

distribution of groups was 22 female and 25 male (N = 188)*

Predictor Variables: Because the primary objective of this study was to

identify variables which effectively predict observation and inference

abilities and because there was little in the literature to help narrow

the choice of variables, a broadly-based selection procedure was adopted.

The guiding principles were the extant theory, the results of empirical

research relevant to this problem, the special interests of the sponsor,

and the amount of time available for testing. Tagiuri's extensive

review of person perception literature concludes that no strong predictors

of that ability exist, but that the most promising theoretical approach

is cognitive complexity.** For this reason a measure of cognitive complexity

was included as an independent variable.***

Other researchers have shown relationships between inferential tasks

and several personality variables. These relationships have not been

strong, but their continued appearance suggested the use of a general

personality measure. For that purpose we selected Cattells' 16PF, which

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* The reader will note that this N fluctuates somewhat in the reported
results. This is due to several cases of mis·ing data, attributable to the
failure of subjects to complete all questionnaires properly. Because the
subject responses remained anonymous it was not possible to separate out
those who did not complete questionnaires prior to assigning them to
groups. This meant that someone who did not finish a questionnaire crucial to
evaluating inference scores could still have participated in the group sessions
and thereby negate the inference results for three other group members.

** Tagiuri, Renato. "Person Perception," in Lindsey, Gardner and Aronson,
Elliot, Handbook of Social Psychology. Reading, Mass: Addison-Wesley, 1968,
pp. 395-449. Also see Orend, Richard J. "Observation, Inference and Cognitive
Structure," Special Report #ED-75-23. Alexandria, VA: Human Resources
Research Organization, 1975.

*** The measure was developed by Robert Zaionc ("The Process of Cognitive
Timing in Communication," Journal of Abnormal and Social Psychology, LXI, 2(1960),
pp. 159-167). The version used in this study was first used by Richard J.
Orend (Policy Making Regarding the Drug Problem: An Experimental Study of
Cognitive Complexity and Small Group Decision-Making, Unpublished Ph.D.
Dissertation, Michigan State University, 1973).

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provides 16 primary and 4 secondary personality dimensions for inclusion

as predictor (independent) variables.* A second set of personality

variables included was the Personality Assessment System (PAS), which is

based on the Wechsler Adult Intelligence Scale (WAIS).** Because of

difficulties in individually administering the WAIS (approximately one

hour for each test), only 107 of the total number of subjects who parti-

cipated in Phases II and III have completed PAS profiles. To accomodate

this discrepancy and the fact that results are in categorical form,

separate analyses were run on PAS variables.

A small set of demographic and socio-economic variables was also

included in the analysis. These include: sex, income, grades, marital

status, religion, and insurance/non-insurance. Commonly-used factors,

such as education level and occupation, were not included because they

were closely related to other variables (occupation) or exhibited little

variance (education). Normal score, which is derived from the WAIS and

approximates and IQ score, was also used for those subjects who took the

WAIS.

In addition to the first-order variables, interactions were used as

regression vectors in the cases of sex and cognitive complexity. These

two important variables (sex because it is the best predictor and complexity

because of its theoretical significance) were interacted with each of

the other independent variables in the analysis.

The final predictors used in the discussion group phase of the

study were the test-created factors. First, one subject in each group was

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* Cattell, Raymond, Eber, Herbert, and Tatsuoka, Maurice, Handbook for the
Sixteen Personality Factor Questionnaire, Illinois, Institute for Personality
and Ability Testing, 1970.

** Winne, John F. and Gittinger, John W., "An Introduction to the Personality
Assessment System," Journal of Clinical Psychology, Monograph Supplement
#38, April, 1973.

given special instructions to focus his/her attention on another member of the group. Observation and inference scores were expected to be different for those subjects who were in this condition and those who were not. (Subsequent analyses showed little difference between focused and unfocused subjects in either observation or inference.)

Second, the scores on film observation and inference tasks may themselves be viewed as predictors of the more "important" interpersonal observation and inference scores. Thus, one aspect of our analysis was to determine if the film scores would be significant independent variables. Unfortunately, the relationships were of a small magnitude and did not add to our ability to predict interpersonal scores.

Taken together, these variables constitute a total of 51 first-order predictors. This includes viewing PAS scores at both primitive and basic levels, as well as examining individual scores on the three personality dimensions.

Stimulus Settings: Two distinctive stimulus settings were created to maximize the opportunity to measure the appropriate kinds of observation and inference skills. Since it was not possible to specify the exact nature of observations or inferences to be drawn in "real world" situations, a multiple-measurement approach was taken. The film provided an opportunity to measure observation and inference in a relatively detached situation, without the influence of ego involvement or the disruption of interpersonal interactions. The film depicted two people, one male and one female, in a small "self-actualization" group, who were attempting to come to grips with personal problems. Both exhibited a rather wide range of emotions; thus the film presented a probably better-than-average

opportunity to draw inferences about other types of behavior than would most interpersonal interactions, especially those of such short duration.

Subjects were shown the film and immediately requested to answer questions about events in the film and about inferred behaviors of the major participants.

Following the film phase subjects were divided into four-person groups for the interpersonal discussion phase. The purpose of this phase was to determine how people reacted in direct-contact situations, a setting more likely in the environment we were trying to emulate. This setting afforded subjects an opportunity to discuss among themselves one or more "controversial" issues of their own choosing, as well as an average of 15 to 20 minutes for a subject to observe each of the other participants in the group. This was approximately the length of time they observed film subjects, and thus the two settings were roughly equal on this dimension.

Controversy was introduced into the group sessions as a means of generating and holding interest, and because it seemed more likely to reveal the character of the subjects. The amount of controversy which actually took place in groups varied from group to group Generally, female groups were less likely to engage in open argument and were more likely to shy away from truly controversial subjects. Male groups were more likely to engage in overt arguing, and disagreement was more readily expressed. This could be a partial explanation for the superior performance of females in the group situation (i.e., lower emotional involvement and therefore greater concentration on the study tasks), but since hard data were not kept on the amount of controversy, this proposition is impossible to test in this context.

It was felt that real-world observers usually know in advance for what they are looking. In order to provide a better chance for making appropriate observations and inferences, subjects were told, in both the film and the group phases, that they would be asked questions about what happened during the film or group session. We could not be explicit in our instructions, but we did not hide our interest in discovering how the subjects performed in these areas. The fact that group sessions immediately followed a testing period in which subjects answered observation and inference questions about the film should also have provided the subjects with evidence about our interests.

Dependent Variables: There were a total of twelve dependent variables used in the study. The four of greatest interest are film observation, film (Bob and Mary Jane) inference, discussion group observation, and discussion group inference.

Film Observation: This test was a measure of how well subjects noticed what went on in the film. (See Appendix L for a description of the procedures used to develop this questionnaire.) It was designed to represent basic observational skills in a non-personal situation. Since the questionnaire was administered just after the subjects saw the film, it tested only immediate recall. The focus of the questions was on three areas, the physical characteristics of the major participants (Bob and Mary Jane), their verbal behavior, and the environment in which they operated.

Film Inference: The score developed for film inference was a composite of two scores; one was inferences about Mary Jane and the other was about Bob. A total score was created by using the means of the separate results. (Establishing criteria for judging the "correctness" of the

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inferences is discussed in Appendix L.) Table IV-1 shows means and

variances for film questions.

Discussion Group Observation: Each group member was tested on his/
her observations on only the physical appearance characteristics of each
of the other group participants. (See Appendix G.) An observation score
was produced by summing the three individual observation scores made by
each subject. Differences in individual observation scores, i.e., differ-
ences between a subject's observations of each of the other three people
in the group, were ignored in the interest of creating an overall score.*

Discussion Group Inference: The primary aim of the inference test
was to determine which subjects demonstrated superior skills at inferring
the behavior of other subjects. The behavior questionnaire filled out by
each subject during Phase I was the criterion for determining the veridi-
cality of inferences. Questions asked following group sessions were
essentially the same questions used in the behavior questionnaire (Appen-
dix C) turned around to refer to other group members (Appendix H). It
was felt that self-report information was the most valid, and certainly
the most convenient, means of identifying most of the behaviors. Previous
behavior patterns, rather than attitudes or values, were used because
they represent definite manifestations of a set of attitudes and because
they are easier for the subjects to identify. They also possess a stability
that is often not present in the expression of attitudes and values.

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* It is possible that individuals who were consistent in their scores are
somehow different from those who are inconsistent. It would have been
possible to explore this area, given additional time. It seems likely,
however, that a large part of the inconsistency exhibited by some subjects
may be attributable to the subject they were observing. Since it would
not have been possible to identify those differences on the basis of
available data, it was determined that such inconsistencies should be
treated as if they had occurred randomly, and a total score was used.

	Total Sample	Insurance Salespersons	All Males	Males (not insurance)	All Females	Females (not insurance)
Observation:						
N	188	28	100	76	88	84
$\overline{x}$	9.050	9.592	9.271	9.139	8.898	8.893
SD	2.634	2.769	2.799	2.840	2.459	2.420
Max. range	0-16	0-16	0-16	0-16	0-16	0-16
Inference:						
Bob:						
N	188	28	100	76	88	84
$\overline{x}$	9.185	8.637	8.650	8.684	9.793	9.821
SD	3.266	3.226	2.772	2.748	3.672	3.617
Max. range	0-16	0-16	0-16	0-16	0-16	0-16
Mary Jane:						
N	188	28	100	76	88	84
$\overline{x}$	10.746	11.409	10.270	9.987	11.287	11.212
SD	3.228	2.896	3.143	3.186	3.256	3.265
Max. range	0-20	0-20	0-20	0-20	0-20	0-20

Table IV-1: Means and Standard Deviations of Scores on Film Observation and Inference Tests

Inference scores were determined in the same manner as observation scores, by summing the three inference test scores by each subject. Again, we made the assumption that internal differences were randomly distributed.*

Distribution for observation and inference scores can be found in Table IV-2

Adjective Checklist: The final set of dependent variables used in the study were the eight dimensions from the modified Adjective Checklist (ACL).** In this exercise we asked subjects to infer how others were evaluating themselves on the ACL. Each subject filled out the ACL on himself/herself and then responded to the same list with instructions to judge how other group members had filled out the test for themselves. In this case, subjects were asked to infer self-evaluations rather than past behaviors. Essentially, this approach was used because self-evaluation was thought to be a useful alternative means to infer potential behavior. Comparisons were made between the scores on each scale (assuming individual items had little or no meaning). Thus, if individual A rated himself 5 on the Aggression scale and individual B though A rated himself 7, B received a score of 2, indicating a difference of 2 points. Total scores were calculated by summing the three difference scores on each of the eight scales. Analyses were then carried out using each scale as a dependent variable. (See Table IV-3.)

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* An argument that this was not the case could easily be made on the basis of rather low multiple R's obtained in our regression analyses. It is possible that a specific aspect of the individuals or the testing situation produced these somewhat disappointing results. However, it was not possible to detect these problems on the basis of available data. The analyses we did run did not point to any specific problems. The results of our analyses will be presented and discussed in greater detail below.

** 1. Self-Confidence; 2. Self-Control; 3. Personal Adjustment; 4. Achievement (need); 5. Endurance; 6. Affiliation (need); 7. Aggression; 8. Change.

	Total Sample	Insurance Salespersons	Males	Males (not insurance)	All Females	Females (not insurance)
Observation:						
N	180	28	0	72	0	80
$\bar{x}$	26.672	26.143	24.677	24.528	29.012	28.788
SD	5.143	5.407	4.479	4.466	4.787	4.815
*Max. range	0-48	0-48	0-48	0-48	0-48	0-48
Inference:						
N	180	28	0	72	0	80
$\bar{x}$	83.582	85.579	80.586	79.833	85.963	86.256
SD	8.676	7.789	9.287	8.229	8.266	8.216
*Max. range	0-138	0-138	0-138	0-138	0-138	0-138

*Score ranges based on total possible points obtainable on three other group participants.

Table IV-2: Means and Standard Deviations of Scores on Discussion Group Observation and Inference Tests.

Table IV-3:   Means and Standard Deviations for
               Summed Differences on Adjective
               Checklist Scales

	Mean	Standard Deviation	N
Self-Confidence	5.953	2.945	179
Self Control	4.054	1.887	179
Personal Adjustment	4.919	2.492	179
Achievement Motivation	6.804	3.428	179
Endurance	5.547	2.651	179
Affiliation	5.595	2.742	179
Aggression	4.724	2.289	179
Change	2.823	1.340	179

In this section we have described the methods used in creation of variables and developing the stimulus settings. Detailed descriptions of testing procedures and certain test constructions are contained in the Appendices. In the next section we shall describe the development of final inference and observation instruments (with item analysis). Following that the analysis results will be presented.

V. DEVELOPMENT OF OBSERVATION AND INFERENCE MEASURES

Item Analysis of Dependent Measures

In order to maximize the sensitivity of the tests of observation and inference ability, each item in each instrument was evaluated in terms of its capacity to provide information concerning differences in performance among the experimental subjects; non-informative items were eliminated from the instruments.

For each instrument, subjects' (S's) item scores (1 = right; 0 = wrong) and total score (the sum of 1's) were entered into a computer program designed for item analysis. The program returns three measures for each item:

(1) Item difficulty (p) - the proportion of subjects passing the item. Generally a "p" value of .50 is considered potentially most informative; items with a p-value of 100 (all pass) or 0 (all fail) provide no differential group of subjects on the ability which the item is intended to assess.

(2) Item discrimination power - the ability of an item to discriminate between high-scoring and low-scoring subjects (in terms of total test score). The index of item discrimination is the point-biserial correlation (r_{pbi}) between an item and the total test. The potential range is 0 to 1.00; as p diverges from .50, r_{pbi} tends to decrease.

(3) The number of S's in the upper half of the total-score range who passed the item and the number of S's in the lower half of the total-score range who passed the item. As the ratio of upper-half to lower-half passers increases, r_{pbi} tends to increase.

In the present study, it was anticipated that sex differences in the ability to make accurate observations and inferences would exist; thus, to ensure that discriminating items were present for both sexes, the item analysis was carried out separately for male and female subgroups.

Tables V-1 through V-5 (column a) summarize the results of the item analyses for the initial instruments. With regard to p-values, the data indicate that while the mean and median values are generally near the optimum value of .5, the items for each instrument tend to distribute evenly over a wide range. For example, Table V-2 shows that for both males and females the mean and median p is quite close to .5: yet over a range of approximately .15 to .9 the number of items in each interval, given a slight fall-off at the extremes, is similar.

Item discriminating power, measured by r_{pbi}, is rather low. For all instruments r_{pbi} ranges from near zero to around .5, with most items clustering in the bottom half of the range. Table V-4 (Discussion Group Observations) is illustrative: for males, two-thirds of the items have an r_{pbi} of .3 or less, while for females the corresponding proportion is about three-fourths; mean r_{pbi} for males and females respectively is .275 and .258.

Items were eliminated from each instrument depending on their discriminating power. Generally, a decision to retain or discard an item is based on the statistical significance of the item-total test correlation. In the case of r_{pbi} its standard error cannot be computed, so a conventional test of significance is not available.*

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* Guilford, J.P., Fundamental Statistics in Psychology and Education, 2d ed., (New York: McGraw-Hill Book Company, Inc.), 1950, p.328.

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	Initial Item Set		Reduced Item Set
# items	26		16
Statistics	Males (n=100)	Females (n=88)	Total n (188)
mean p	.653	.676	.550
median p	.720	.745	.593
range of p	.220-.950	.227-1.00	.223-.840
distribution of p	$<.3=3$	$<.3=2$	$.2-.299=3$
	$.3-.399=0$	$.3-.399=4$	$.3-.399=2$
	$.4-.499=5$	$.4-.499=0$	$.4-.499=1$
	$.5-.599=1$	$.5-.599=1$	$.5-.599=2$
	$.6-.699=3$	$.6-.699=4$	$.6-.699=4$
	$.7-.799=6$	$.7-.799=6$	$.7-.799=2$
	$.8-.899=4$	$.8-.899=5$	$.8-.899=2$
	$.9-1.0=4$	$.9-1.0=4$	
mean r_{pbi}	.326	.303	.318
median r_{pbi}	.335	.299	.313
range r_{pbi}	0-.588	0-.508	.038-.486
distribution of r_{pbi}	$<.3=9$	$<.3=13$	$<.1=1$
	$.3-.399=9$	$.3-.399=9$	$.2-.299=6$
	$.4-.499=7$	$.4-.499=3$	$.3-.399=6$
	$.5-.599=1$	$.5-.599=1$	$.4-.499=3$
	1a		1b

Table V-1: Summary of Item Analysis for Film Observation Questionnaire; Initial Item Set (1a) and Reduced Item Set (1b)

Statistics	Initial Item Set		Reduced Item Set
# items	39		20
	Males (n=100)	Females (n=88)	Total n (188)
mean p	.542	.547	.525
median p	.520	.545	.505
range of p	.190-.920	.136-.920	.186-.830
distribution of p	$<.3=3$ .3-.399=6 .4-.499=8 .5-.599=6 .6-.699=6 .7-.799=5 .8-.899=4 .9-1.0 =1	$<.3=3$ .3-.399=7 .4-.499=6 .5-.599=7 .6-.699=6 .7-.799=6 .8-.899=3 .9-1.0 =1	$<.3=1$ .3-.399=4 .4-.499=5 .5-.599=2 .6-.699=4 .7-.799=2 .8-.899=2
mean r_{pbi}	.201	.199	.283
median r_{pbi}	.174	.211	.291
range of r_{pbi}	.008-.488	.110-.466	.148-.414
distribution of r_{pbi}	$<.3=29$ .3-.399=7 .4-.499=3	$<.3=30$ .3-.399=6 .4-.499=3	$<.2=2$ $<.3=8$ .3-.399=9 .4-.499=1
	2a		2b

Table V-2: Summary of Item Analysis for Film Inference Questionnaire
(Mary Jane); Initial Item Set (2a) and Reduced Item Set (2b)

	Initial Item Set		Reduced Item Set
# items	39		16
Statistics	Males (n=100)	Females (n=88)	Total n (188)
mean p	.580	.564	.529
median p	.600	.591	.548
range of p	.180-.930	.193-.943	.207-.734
distribution of p	<.3=6 .3-.399=5 .4-.499=1 .5-.599=7 .6-.699=6 .7-.799=7 .8-.899=5 .9-1.0 =2	<.3=6 .3-.399=4 .4-.499=5 .5-.599=6 .6-.699=8 .7-.799=4 .8-.899=2 .9-1.0 =4	<.3=1 .3-.399=4 .4-.499=1 .5-.599=4 .6-.699=2 .7-.799=4
mean r_{pbi}	.207	.213	.313
median r_{pbi}	.186	.194	.329
range of r_{pbi}	.034-.421	.003-.551	.120-.451
distribution of r_{pbi}	<.3=28 .3-.399=9 .4-.499=2	<.3=30 .3-.399=5 .4-.499=3 .5-.599=1	<.2=2 .2-.299=5 .3-.399=7 .4-.499=2
	3a		3b

Table V-3: Summary of Item Analysis for Film Inference Questionnaire (Bob);
Initial Item Set (3a) and Reduced Item Set (3b)

	Initial Item Set		Reduced Item Set
# items	19		16
Statistics	*Males (n=100)	*Females (n=88)	*Total n (188)
mean p	.572	.611	.556
median p	.587	.678	.557
range of p	.257-.960	.004-.996	.317-.766
distribution of p	<.3=2 .3-.399=4 .4-.499=2 .5-.599=2 .6-.699=4 .7-.799=2 .8-.899=2 .9-1.0 =1	<.3=2 .3-.399=1 .4-.499=4 .5-.599=1 .6-.699=3 .7-.799=6 .8-.899=0 .9-1.0 =2	.3-.399=3 .4-.499=5 .5-.599=0 .6-.699=3 .7-.799=5
mean r_{pbi}	.275	.258	.299
median r_{pbi}	.265	.258	.273
range of r_{pbi}	.039-.475	.039-.464	.179-.476
distribution of r_{pbi}	<.3=12 .3-.399=6 .4-.499=1	<.3=14 .3-.399=3 .4-.499=2	<.2=1 .2-.299=8 .3-.399=4 .4-.499=3
	4a		4b

Table V-4: Summary of Item Analysis for Discussion Group Observation
Questionnaire; Initial Item Set (4a) and Reduced Item Set (4b)

*Statistics computed on items pooled from three administrations per S,
i.e., 3x100=300 male response, 3x88=264 female responses.

	Initial Item Set		Reduced Item Set
# items	64		46
Statistics	*Males (n=100)	*Females (n=88)	*Total n (188)
mean p	.610	.643	.598
median p	.617	.693	.643
range of p	.013-.976	.046-1.00	.209-.916
distribution of p	<.3=7	<.3=7	<.3=5
	.3-.399=5	.3-.399=4	.3-.399=6
	.4-.499=9	.4-.499=11	.4-.499=6
	.5-.599=9	.5-.599=5	.5-.599=4
	.6-.669=9	.6-.699=6	.6-.699=8
	.7-.799=9	.7-.799=8	.7-.799=8
	.8-.899=12	.8-.899=11	.8-.899=6
	.9-1.0 =4	.9-1.0 =12	.9-.999=3
mean r_{pbi}	.166	.183	.201
median r_{pbi}	.168	.171	.202
range of r_{pbi}	.002-.381	.000-.471	.082-.332
distribution of r_{pbi}	<.1=14	<.1=16	<.3=5
	.1-.199=28	.1-.199=23	.3-.399=4
	.2-.299=21	.2-.299=14	.4-.499=9
	.3-.399=1	.3-.399=10	.5-.599=3
	.4-.499=0	.4-.499=1	.6-.699=6
			.7-.799=7
			.8-.899=9
			.9-.999=3
	5a		5b

Table V-5: Summary of Item Analysis for Discussion Group Inference
Questionnaire; Initial Item Set (5a) and Reduced Item Set (5b)

* Statistics computed on items pooled from three administrations
per S, i.e., 3x100=300 male responses, 3x88=264 female responses.

In the present experiment the decision to drop an item was based on the ratio of the number of S's in the upper half of the total-score range who passed the item to the number in the lower half who passed the item; the statistical significance of the ratio was determined according to the following formula:*

$$z = \frac{p - \hat{p}}{\sigma_p}$$

where z is the standard normal variable;

p is the proportion of S's passing the item who are in the upper half of the total-score range;

σ_p is the standard deviation of p; and

$\hat{p}$ is the expected proportion of upper-half passers under the null hypotheses (in the present case, .50).

Items returning a z-score of less than 1.29 (alpha greater than .10) were eliminated from all tests of observational and inference ability.

Tables V-1 through V-5 (column b) summarize the statistical properties of the reduced item sets; the values were computed on the full sample of S's, i.e., males and females combined. The number of items eliminated ranged from three out of nineteen (Table V-4, Discussion group observation) to twenty-three out of thirty-nine (Table V-3, Film inference - Bob). The data indicate modest improvement in item characteristics for all instruments. For example, r_{pbi} on the "Bob" film inference questionnaire increased from around .2 to slightly over .3 (Tables V-3a and V-3b); item p-values in the same instrument dropped slightly from a mean of approximately .7 to approximately .53.

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* Scott, William A. and Wertheimer, Michael, Introduction to Psychological Research, (New York: John Wiley & Sons), 1970.

Distributions of p-values remained approximately the same for all instruments--items distributed evenly across the range of obtained values. The range of r_{pbi} values shifted upward for all instruments; further, the negative skew characterizing the distributions of these values in the initial item sets was eliminated; the distributions in the reduced item sets were either rectangular or slightly leptokurtic.

On the basis of the analysis just described, the most discriminating items in each test of observation and inference were identified. It was further found that in the separate instruments, although the majority of items discriminated equally well for males and females, some items discriminated either females or males, but not both; in only one test did such disjoint discriminators occur with equal frequency (cf. Table V-6). Since the presence in an instrument of a disproportionate number of discriminators for one sex would tend to bias the total scores of members of that sex downward, the test scores for each subject on each instrument were computed according to the following formula:

$$S_w = S_r + (C \times S_r)$$

where S_w = Weighted Score
S_r = Raw Score
C = Absolute Value of: $\dfrac{\# \text{ "Male" Items} - \# \text{ "Female" Items}}{\text{Total } \# \text{ Items}}$

Table V-6 shows for each instrument, the weighting factor (C) and the sex of the subjects whose scores were weighted.

Questionnaires for each scale are found in Appendices D-H. Starred items indicate those retained for the final analysis.

Table V-6: Frequency of Items in each Dependent
Measure Which Discriminate for Males,
Females, or Both

| | Frequency of Discriminator Type | | |
Instrument	Males	Females	Either
Film Observation	4 (C=.062)	3	9
Film Inference			
Bob	2	5 (C=.187)	9
Mary Jane	5	5 (C=.05)	9
Discussion Group			
Observation	3	3	10
Inference	12	13 (C=.0217)	21

VI. DATA ANALYSIS

A large number of continuous and categorical measures were taken on
each subject during the course of the study. Those selected for statistical
analysis comprise the largest substantively meaningful subset which
could be expected to provide statistically reliable results within the
limits imposed by the sampel size (N = 188).*

Tables VI-1, VI-2, and VI-3 present the measures of inference and
observation, the variables selected as potential predictors of each and
the statistical method(s) used to analyze their relationships. The
remainder of this section is organized by type of analysis.

REGRESSION ANALYSIS RESULTS

As summarized in the top portion of Table VI-1, a number of cognitive,
demographic and personality variables were analyzed to determine their
value as predictors of observational and inferential ability. Due to the
limitations imposed by sample size (see above) the personality variables
could not be included in the same regression analysis with the cognitive
and demographic factors. Consequently, it was decided to analyze these
two sets of factors separately, each in its own regression analysis, and
then combine significant variables from each in a final analysis.**

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* This N will fluctuate somewhat depending upon the variables being
analyzed. This fluctuation is due to missing data for several variables.
Also, programs used in our analyses varied in the ways they handled
missing data. Both case deletion and pairwise deletion are used. Thus,
the same variables may have different N's, depending on the program being
used. In all cases the differences are small and make little or no
difference in the outcomes.

** It adopting this procedure we lost the possible interactions of non-
significant variables on each list. However, given the magnitude of
the relationships found, both from main effects and from other interactions,
it does not appear likely that much important information was lost.

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CRITERION MEASURES   PREDICTOR VARIABLES

OBSERVATION SCORES: COGNITIVE:
  1 Film   15 Differentiation
  2 Discussion Group   16 Integration
                                        17 Cognitive Complexity

INFERENCE SCORES   DEMOGRAPHIC:
  3 Film - Bob/Mary Jane   18 Sex
                                      19 Marital Status (Married, Unmarried)
    Discussion Group: 20 Grades
  4 Behavior   21 Income
  5 - 12 Self-Perception   22 Religion (Protestant, Catholic, Other)
       (ACL Scales)   23 Vocation (Insurance sales or Student)
                                      24 Interaction of 17 and 18
                                      25 Interaction of 17 and 23

DERIVED SCORES: PERSONALITY:
 13 Focused observations vs.   26 - 45 Subscores of the Sixteen
    non-focused observations   Personality Factors Inventory
 14 Focused inferences vs.
    non-focused inferences

 46 Instructions to S
    (focus, no focus)
 47 Cognitive Complexity
    (17 above)
 48 Sex
    (18 above)
 49 Interaction of Sex and Vocation
 50 Interaction of Vocation and Cognitive Complexity
 51 Interaction of Sex and Cognitive Complexity

Table VI-1: Variables Analyzed thru Stepwise Linear Regression Procedures--
               Variables 1-12 by 15-45; Variables 13 and 14 by 46-51

DEPENDENT VARIABLES	INDEPENDENT VARIABLES	COVARIATES
Observation Scores:	WAIS PAS Categories:	11 Cognitive Complexity
1 Film	5 Primitive Level	12 PAS Normal Score
2 Discussion Group	6 Basic Level	
	7-9 Dimension Regions	
Inference Scores:		
3 Mean of Bob and	Demographic	
Mary Jane Scores	10 Sex	
4 Discussion Group		

Table VI-2: Variables Analyzed thru Analysis of Covariance; Variables
1-4 by 5-9, each in combination with 10; 11 and 12 are
covariates in all Analyses

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DEPENDENT VARIABLES   INDEPENDENT VARIABLES

Observation Scores: Demographic:

   1   Film   7   Insurance Salespersons
   2   Discussion Group   Males (not insurance)
                                              Females (not insurance)

Inference Scores: Personality:

   3   Film - Bob   8   PAS Primitive Levels
   4   Film - Mary Jane   9   PAS Basic Levels
   5   Discussion Group   10   PAS Dimension Poles
                                          11   Internalizer/Externalizer
Cognitive: 12   Role Adaptive/Pole Uniform
                                         13   Regulated/Flexible
   6   Cognitive Complexity

Table VI-3:   Variables Analyzed thru Analysis of Variance: Variables
              1-5 each by 7; Variable 6 by each of 8-13

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<u>Cognitive and Demographic Variables</u>: Tables VI-4 through VI-15

present the results of the stepwise regression analyses for each of the

observation and inference scores regressed over all of the cognitive and

demographic variables (cf. Table VI-1). For both film and discussion

group observation (Tables VI-4 and VI-5 respectively), the only variable

that contributes significantly is sex; in both cases, the negative sign

of the Beta weight indicates that females obtain higher scores than males.

In the case of the Film score, sex accounts for only a small propor-

tion of the variance (R^2 = .022). For the Discussion Group Observation

Score, however, the R^2 is of moderate size, .166, and represents the largest

single variable contribution found in the regression analyses. The fact

that women are better observers than men is consistent with other research

on this subject. Turner, for example, found sex to be one of the few, as

well as the best, predictors of observation scores on several experimental

tasks.* It is also important to note that several interactions were also

included in the list of variables and that the effect of sex was not

noticeably reduced.

Inferences about past behavior are measured by the mean of the "Bob"

and "Mary Jane" tests administered after the film, and by the similar

questions answered by Subjects about their cohorts at the end of the group

discussion.

The results of the regression analyses on inference scores are

presented in Tables VI-6 and VI-7. As with observation, the principal

contributor to inference score in both settings is sex--the negative weight

meaning that females score better than males. However, additional predictor

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* Turner, Jimmie, "Powers of Observation: The Measurement and Correlates
of Observational Ability," Unpublished PhD Dissertation, Department of
Psychology, University of Missouri, 1973.

DEPENDENT VARIABLE: Film Observation Score

Multiple R   0.14891
R Square   0.02217
Adjusted R Square   0.01659
Standard Error   2.59272

Analysis of Variance	DF	Sum of Squares	Mean Square	
Regression	1.	26.67579	26.67579	3.96832 ^{F} ($p<.05$)
Residual	175.	1176.38429	6.72220	

Variable	B	Beta	Standard Error B	F	P
Differentiation	-0.03800	-0.14891	0.01908	3.968	<.05
(Constant)	10.01147				

TABLE VI-4:   Regression Analysis on Film Observation Score

DEPENDENT VARIABLE: Discussion Group Observation Score

Multiple R   0.43894
R Square   0.19267
Adjusted R Square 0.17867
Standard Error   1.52077

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	3.	95.48609	31.82870	13.76231 (p<.01)
Residual	173.	400.10461	2.31274	

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
Sex	-0.73036	-0.43591	0.11926	37.503	<.01	0.40844	0.16682	0.16682
Catholic	0.30663	0.11803	0.17782	2.974	NS	0.42387	0.17966	0.01284
Cognitive Complex-ity X Insurance	0.00525	0.11887	0.00314	2.788	NS	0.43894	0.19267	0.01301
(Constant)	9.10042							

TABLE VI-5:   Regression Analysis on Discussion Group Observation Score

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DEPENDENT VARIABLE: Mean of Film Inference Scores on Bob and Mary Jane

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.29061	Regression	3.	92.89686	30.96562	5.31946 (p<.01)
R Square	0.08445	Residual	173.	1007.06608	5.82119	
Adjusted R Square	0.06858					
Standard Error	2.41271					

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
Sex	- 0.65827	- 0.26372	0.18638	12.474	<.01	0 22074	0.04872	0.04872
Cognitive Complexity	- 0.01494	- 0.14958	0.00735	4.134	<.05	0.26534	0.07040	0.02168
Grades	0.36753	0.12034	0.22555	2.655	NS	0.29061	0.08445	0.01405
(Constant)	9.80439							

TABLE VI-6: Regression Analysis on Film Inference Scores

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DEPENDENT VARIABLE: Discussion Group Inference Score

Multiple R	0.3726	
R Square	0.14157	
Adjusted R Square	0.11128	
Standard Error	2.68149	

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	6.	201.59605	33.59934	4.67281 (p<.01)
Residual	170.	1222.36766	7.19040	

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
Sex	-0.80718	-0.28421	0.21378	14.256	<.01	0.24874	0.06187	0.06187
Insurance	1.05204	0.25397	0.48934	4.622	<.05	0.30696	0.09422	0.03235
Integration	-0.81591	-0.19421	0.37750	4.672	<.05	0.32472	0.10545	0.01122
Catholic	0.76290	0.17325	0.36213	4.438	<.05	0.34332	0.11787	0.01242
Protestant	-0.44711	-0.13193	0.28874	2.398	NS	0.36183	0.13092	0.01305
Cognitive Complexity X Insurance	-0.01459	-0.19507	0.01004	2.110	NS	0.37626	0.14157	0.01066
(Constant)	29.63865							

TABLE VI-7: Regression Analysis on Discussion Group Inference Scores

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variables are entered into the regression equations for inference. Table VI-7 indicates that for discussion group inference, small but statistically significant contributions to prediction are made by vocation, religion, and integration score; the Beta weights here mean that insurance salespersons do better than those Ss not so engaged, Catholics do better than members of other faiths, and that integration score is inversely related to inference score--a finding somewhat at odds with theoretical expectations.

Table VI-6 indicates that in addition to sex, cognitive complexity score is a significant predictor of inferences about people viewed in filmed settings. The negative Beta weight indicates that cognitive complexity is inversely related to inference; this result is also at variance with initially expected outcomes.

The eight scales obtained from the Adjective Checklist were included in the regression analysis in an effort to determine whether the ability to make inferences about personality variables is influenced by cognitive and demographic factors. The accuracy of a Subject's inferences about the self-perceptions of others is indicated by the difference between his characterization of the other and the other's characterization of himself. In other words, lower ACL scores mean better inference; thus, regression analysis outcomes for the ACL are in the opposite direction to those made for the measures of inference about behavior. The results of these regression analyses are presented in Tables VI-8 through VI-15. While the data show that for most of the ACL scores, one or more statistically significant predictors are returned, no clear-cut pattern emerges. For example, sex is the only significant predictor for "Self-Control" (Table VI-9) and for "Aggressiveness" (Table VI-14). The positive Beta weight for

DEPENDENT VARIABLE: Mean of Inference Scores on ACL Self Confidence Scale

Multiple R   0.11827
R Square   0.01399
Adjusted R Square   0.00835
Standard Error   2.87422

Analysis of Variance	DF	Sum of Squares	Mean Square	
Regression	1.	20.50913	20.50913	2.48261 F (P=NS)
Residual	175.	1445.69551	8.26112	

Variable	B	Beta	Standard Error B	F	P
Sex	0.00670	0.11827	0.00425	2.483	NS
(Constant)	5.93816				

TABLE VI-8: Regression Analysis on ACL Self-Confidence Scale

DEPENDENT VARIABLE: Mean of Inference Scores on ACL Self Control Scale

Multiple R	0.26006
R Square	0.06763
Adjusted R Square	0.05146
Standard Error	1.84624

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	3.	42.77456	14.25819	4.18299 (p<.01)
Residual	173.	589.68997	3.40861	

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
Sex	- 0.76807	- 0.40579	0.28652	7.186	<.01	0.17489	0.03059	0.03059
Cognitive Complexity X Sex	0.01067	0.28708	0.00562	3.603	NS	0.22147	0.04905	0.01846
Marital Status	- 0.35195	- 0.13783	0.18954	3.448	NS	0.26006	0.06763	0.01858
(Constant)	5.86689							

TABLE VI-9: Regression Analysis on ACL Self-Control Scale

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DEPENDENT VARIABLE: Mean of Inference Scores on ACL Personal Adjustment Scale

Multiple R   0.16477
R Square   0.02715
Adjusted R Square 0.02159
Standard Error   2.45364

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	1.	29.40048	29.40048	4.88351 (p<.05)
Residual	175.	1053.56373	6.02036	

Variable	B	Beta	Standard Error B	F	P
Marital Status	- 0.55056	- 0.16477	0.24914	4.884	<.05
(Constant)	4.56205				

TABLE VI-10: Regression Analysis on ACL Personal Adjustment Scale

DEPENDENT VARIABLE: Mean of Inference Scores on ACL Need-for-Achievement Scale

Multiple R   0.13000
R Square   0.01690
Adjusted R Square   0.01128
Standard Error   3.34658

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	1.	33.68991	33.68991	3.00814 (P=NS)
Residual	175.	1959.92937	11.19960	

Variable	B	Beta	Standard Error B	F	P
Income	- 0.13461	- 0.13000	0.07761	3.008	NS
(Constant)	7.60971				

TABLE VI-11: Regression Analysis on ACL Need-for-Achievement Scale

sex means that females' difference scores are lower; hence they are again better inferrers than males.

Insurance salespersons are the only reliable inferrers of "Endurance" (Table VI-12), and they are better at predicting "Need for Affiliation" than other Subjects (Table VI-13). Here, we see for the second time the appearance of an expected difference between the special sample of individuals supposedly schooled in good observation and inference (because their livelihood depends to some extent on developing these skills) and the remainder of our student sample. This variable first appeared as a secondary predictor on Discussion Group Inference Score. The explanation for this difference could be the fact that these subjects have broader experience in dealing with people about whom they must make certain inferences, thus they have developed a higher skill level. On the other hand, they are also older than most of the student subjects, and the differences noted could be a function of age.

Cognitive complexity is selected by the analysis as negatively related to accurancy of inference about affiliation, another reversal of original expectations (Table VI-13). On the same table the interaction between insurance sales and cognitive complexity refers to the fact that while insurance salespersons infer affiliation need better than do others, the difference is not as pronounced when low cognitive complexity individuals from both groups are compared.

Married individuals make more accurate inferences about "Personal Adjustment" than unmarried people (Table VI-10), while grades are identified as a negative predictor of "Need for Change" (Table VI-15). It is diffi-cult to draw any firm conclusions from the results of our analyses of predictors of ACL self-evaluation. It may be surmised that making inferences

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DEPENDENT VARIABLE: Mean of Inference Scores on ACL Endurance Scale

Multiple R   0.24967
R Square   0.06233
Adjusted R Square 0.05156
Standard Error   2.55326

Analysis of Variance

	DF	Sum of Squares	Mean Square	
Regression	2.	75.40724	37.70362	5.78353 (p<.01)
Residual	174.	1134.33014	6.51914	

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
Insurance	- 0.72688	- 0.19058	0.29172	6.209	<.05	0.22286	0.04967	0.04967
Sex	- 0.30665	- 0.11715	0.20000	2.351	NS	0.24967	0.06233	0.01267
(Constant)	5.02632							

TABLE VI-12:   Regression Analysis on ACL Endurance Scale

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DEPENDENT VARIABLE: Mean of Inference Scores on ACL Need-for-Affiliation Scale

Multiple R	0.26368
R Square	0.06953
Adjusted R Square	0.05339
Standard Error	2.66364

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	3.	91.71842	30.57281	4.30909 (p<.01)
Residual	173.	1227.42662	7.09495	

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
Insurance	- 2.44733	- 0.61382	0.68685	12.696	<.01	0.13920	0.01938	0.01938
Cognitive Complex- ity X Insurance	0.04874	0.67693	0.01597	9.315	<.01	0.17542	0.03077	0.01139
Cognitive Complexity	0.04287	0.39193	0.01597	7.206	<.01	0.26368	0.06953	0.03876
(Constant)	3.53938							

TABLE VI-13: Regression Analysis on ACL Need-for-Affiliation Scale

DEPENDENT VARIABLE: Mean of Inference Scores on ACL Agression Scale

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.34193	Regression	4.	108.94100	27.23525	5.69287 (p<.01)
R Square	0.11691	Residual	172.	822.86437	4.78410	
Adjusted R Square	0.09638					
Standard Error	2.18726					

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
Insurance	- 0.35166	- 0.10494	0.31271	1.265	NS	0.25637	0.06572	0.06572
Sex	- 0.3967	- 0.17271	0.17217	5.311	<.05	0.31011	0.09617	0.03045
Protestant	0.31064	0.11331	0.20511	2.294	NS	0.32613	0.10636	0.01019
Marital Status	- 0.39305	- 0.12681	0.27412	2.056	NS	0.34193	0.11691	0.01056
(Constant)	4.19907							

TABLE VI-14: Regression Analysis on ACL Aggression Scale

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DEPENDENT VARIABLE: Mean of Inference Scores on ACL Need-for-Change Scale

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.16257	Regression	1.	8.32794	8.32794	4.75041 (p<.05)
R Square	0.02643	Residual	175	306.79195	1.75310	
Adjusted R Square	0.02086					
Standard Error	1.32405					

Variable	B	Beta	Standard Error B	F	P
Grades	0.26574	0.16257	0.12192	4.750	<.05
(Constant)	2.16989				

TABLE VI-15: Regression Analysis on ACL Need-for-Change Scale

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about others' self-evaluations is difficult at best. The fact that any group is able to do significantly better than another is perhaps surprising. However, the omnipresent power of women to do better at these tasks than men does not substantially weaken in this area. The strong performance of insurance salespersons as better inferrers also argues for a selection procedure based on experience, if not age, when attempting to choose good inferrers.

Personality Variables: The instrument employed to investigate the relation between personality characteristics and ability to observe and infer is the Sixteen Personality Factor Questionnaire (16PF) (Cattell et al., 1970). This instrument returns scores on a total of twenty personality factors. As discussed earlier, the relatively small sample size dictates that, in order to maximize statistical reliability, the number of terms in the regression equation must not exceed twelve or so. Thus, in anticipation of subsequent regression analyses in which personality, cognitive, and demographic variables would be entered together as predictors, a decision was made to interpret as significant only those 16PF scores which in addition to being significant at or beyond the .05 level also accounted for more than two percent of the variance in the dependent variables.

Those 16PF factors which are significant under these criteria are reported in Table VI-16 through VI-24. For the dependent variables measuring inference and observation of behavior, there is no specific pattern of predictive personality factors. Observation of filmed events is positively associated with degree of venturesomeness (Table VI-16), while observation in an interpersonal setting is negatively associated with emotional stability (Table VI-17), that is, in terms of the 16PF, the

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DEPENDENT VARIABLE: Film Observation

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.14639	Regression	1.	27.21546	27.21546	3.98545 (p<.05)
R Square	0.02143	Residual	182.	1242.82451	6.82871	
Adjusted R Square	0.01605					
Standard Error	2.61319					

Variable	B	Beta	Standard Error B	F	P
16PF, Factor H, Shy - Venturesome	0.19077	0.14639	0.09556	3.985	
(Constant)	7.89317				

TABLE VI-16: Regression Analysis of 16PF on Film Observation

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DEPENDENT VARIABLE: Observation

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.20851	Regression	3.	23.08723	7.69574	2.72702 (p<.05)
R Square	0.04347	Residual	180.	507.96590	2.82203	
Adjusted R Square	0.02753					
Standard Error	1.67989					

Variable	B	Beta	Standard Error B	F	P
16PF, Factor C, Affected - Emotionally Stable	- 0.12234	- 0.14213	0.06313	3.756	<.05
16PF, Factor A, Reserved - Outgoing	0.11235	0.12910	0.06384	3.097	NS
16PF, Factor QIV, Subduedness - Independence	0.10442	0.10174	0.07500	1.938	NS
(Constant)	8.28731				

TABLE VI-17: Regression Analysis of 16PF on Observation Score

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more emotionally stable an individual, the less he will observe when interacting with others. Accuracy of inferences made from the film are positively associated with assertiveness and negatively related to self-sufficiency (Table VI-18). Inference in an interpersonal setting is negatively related to apprehensiveness (Table VI-19); that is, the greater an individual's apprehensiveness, the less accurate his inferences about the other members of his discussion group. Of all the results for the 16PF thus far discussed, this seems intuitively to make the most sense. But, again, the R^2 values are quite small, and such results provide only suggestions of what might be underlying explanations for what is happening.

With regard to the ability to make inferences about how others see themselves, the personality factor "Suspiciousness" was a significant predictor of several ACL scale scores. The regression analyses indicate that as degree of suspiciousness increases, inference accuracy also increases for the following ACL scales: self-confidence (Table VI-20), self-control (Table VI-21), personal adjustment (Table VI-22), and need for achievement (Table VI-23). Perhaps suspicious people are more probing in their inter-actions with others and thus are better able to evaluate others' self-opinion.

Other 16PF factors emerging are: imaginativeness, which is positively related to inferences about both need for achievement (Table VI-23) and endurance (Table VI-24); emotional stability, which is positively related to inferences about endurance (Table VI-24); and tender-mindedness, which is a negative predictor of inferences concerning self-control (Table VI-21).

Combined Variables: All significant cognitive, demographic, and personality variables identified in the foregoing analyses were entered into a third regression analysis in order to determine their relative

DEPENDENT VARIABLE: Bob/Mary Jane Inference

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.30336	Regression	9.	106.57996	11.84222	2.03149 (p<.05)
R Square	0.09509	Residual	174.	1014.30156	5.82932	
Adjusted R Square	0.04828					
Standard Error	2.41440					

Variable	B	Beta	Standard Error B	F	p
16PF, Factor:					
Q2, Group-Dependent - Self-Sufficient	-0.29067	-0.22042	0.15185	3.664	<.05
E, Humble - Assertive	0.49994	0.38656	0.17509	8.153	<.01
Q3, Undisciplined Self-Conflict - Controlled	0.13574	0.10969	0.10243	1.756	NS
QIV, Subduedness - Independence	-0.33566	-0.22511	0.24013	1.954	NS
Q4, Relaxed - Tense	-0.10395	-0.08564	0.10006	1.079	NS
B, Less Intell. - More Intell.	0.10172	0.08098	0.09543	1.136	NS
QI, Introversion - Extroversion	-0.15088	-0.09590	0.17715	0.725	NS
I, Tough - Tender Minded	0.05987	0.04639	0.10290	0.339	NS
M, Practical - Imaginative	0.06312	0.05066	0.13630	0.214	NS
(Constant)	10.15800				

TABLE VI-18: Regression Analysis of 16PF on Bob/Mary Jane Inference Score

DEPENDENT VARIABLE: Inference

		Analysis of Variance	DF	Sum of Squares	Mean Square		
Multiple R	0.28026	Regression	7.	124.77951	17.82564	2.14312	(p<.05)
R Square	0.07854	Residual	176.	1463.89769	8.31760		
Adjusted R Square	0.04189						
Standard Error	2.88403						

Variable	B	Beta	Standard Error B	F	P
16PF, Factor:					
O, Placid - Apprehensive	- 0.31207	- 0.19746	0.11763	7.039	<.01
I, Tough-Tender Minded	0.16368	0.10652	0.11752	1.940	NS
Q₁, Conservative - Experimenting	0.15271	0.10235	0.11351	1.810	NS
B, Less Intelligent - More Intelligent	0.11779	0.07877	0.10876	1.173	NS
L, Trusting - Suspicious	0.11504	0.07754	0.11032	1.087	NS
F, Sober - Happy-go-lucky	- 0.08818	- 0.05325	0.12122	0.529	NS
G, Expedient - Conscientious	0.08083	0.05284	0.11261	0.515	NS
(Constant)	26.34335				

TABLE VI-19: Regression Analysis of 16PF on Group Discussion Inference Score

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DEPENDENT VARIABLE: ACL Self-Confidence

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.24839	Regression	5.	98.64366	19.72873	2.34087 (p<.05)
R Square	0.06170	Residual	178.	1500.17217	8.42793	
Adjusted R Square	0.03534					
Standard Error	2.90309					

Variable	B	Beta	Standard Error B	F	P
16PF, Factor:					
L, Trusting - Suspicious	- 0.30894	- 0.20757	0.10927	7.993	<.01
H, Shy - Venturesome	- 0.14487	- 0.09908	0.11097	1.704	NS
M, Practical - Imaginative	0.17334	0.11648	0.11347	2.333	NS
I, Tough - Tender Minded	- 0.14154	- 0.09182	0.11711	1.461	NS
Q2, Group-dependent - Self-sufficient	- 0.09900	- 0.06286	0.12094	0.670	NS
(Constant)	8,92345				

TABLE VI-20: Regression Analysis of 16PF on ACL Self-Confidence Score

DEPENDENT VARIABLE: ACL Self-Control

Multiple R	0.31033
R Square	0.09630
Adjusted R Square	0.06036
Standard Error	1.82519

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	7.	62.34440	8.90634	2.67939 (p<.01)
Residual	176.	585.02697	3.32402	

Variable	B	Beta	Standard Error B	F	P
16PF, Factor:					
L, Trusting - Suspicious	- 0.21082	- 0.22260	0.07000	9.070	<.01
I, Tough - Tender Minded	- 0.15692	- 0.15386	0.07366	4.198	<.05
G, Expedient - Conscientious	- 0.12693	- 0.12998	0.07261	3.055	NS
O, Placid - Apprehensive	0.10022	0.09933	0.07699	1.694	NS
M, Practical - Imaginative	0.09667	0.10209	0.07116	1.845	NS
N, Forthright - Shrewd	0.09795	0.09613	0.07910	1.533	NS
F, Sober - Happy-go-lucky	0.09068	0.08579	0.07789	1.355	NS
(Constant)	4.56864				

TABLE VI-21: Regression Analysis of 16PF on ACL Self-Control Score

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DEPENDENT VARIABLE: ACL Personal Adjustment

Multiple R	0.14385
R Square	0.02069
Adjusted R Square	0.01531
Standard Error	2.46251

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	1.	23.31917	23.31917	3.84555 (p≈.05)
Residual	182.	1103.63673	6.06394	

Variable	B	Beta	Standard Error B	F	P
16PF, Factor L, Trusting - Suspicious	- 0.17975	- 0.14385	0.09166	3.846	≈.05
(Constant)	5.92976				

TABLE VI-22: Regression Analysis of 16PF on ACL Personal Adjustment Score

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DEPENDENT VARIABLE: ACL Need-for-Achievement

Multiple R	0.26690
R Square	0.07124
Adjusted R Square	0.03975
Standard Error	3.38747

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	6.	155.78176	25.96363	2.26264 (p<.05)
Residual	177.	2031.06274	11.47493	

Variable	B	Beta	Standard Error B	F	P
16PF, Factor:					
L, Trusting - Suspicious	- 0.32867	- 0.18882	0.13167	6.231	<.05
M, Practical - Imaginative	0.32973	0.18946	0.13228	6.213	<.05
Q_2, Group-dependent - Self-sufficient	- 0.23319	- 0.12660	0.13888	2.819	NS
Q_3, Undisciplined Self-Conflict - Controlled	- 0.12909	- 0.07468	0.13268	0.946	NS
N, Forthright - Shrewd	0.12419	0.06632	0.13710	0.821	NS
I, Tough - Tender Minded	- 0.11669	- 0.06473	0.13723	0.723	NS
(Constant)	8.73053				

TABLE VI-23: Regression Analysis of 16PF on Need-for-Achievement Score

TABLE VI-24: Regression Analysis of 16PF on ACL Endurance Score

DEPENDENT VARIABLE: ACL Endurance

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.42805					
R Square	0.18322	Regression	20.	239.31243	11.96562	1.82825 (p<.05)
Adjusted R Square	0.08301	Residual	163.	1066.81234	6.54486	
Standard Error	2.55829					

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
16PF, Factor:								
M, Practical - Imaginative	1.03836	0.77201	0.25198	16.981	$<.01$	0.15069	0.02271	0.02271
L, Trusting - Suspicious	-0.20725	-0.15406	0.15799	1.721	NS	0.20419	0.04169	0.01899
I, Tough - Tender Minded	-0.26792	-0.19230	0.14041	3.641	NS	0.24392	0.05949	0.01780
F, Sober - Happy-go-lucky	0.47410	0.31578	0.22043	4.626	$<.05$	0.26820	0.07193	0.01243
Q_3, Undisciplined Self-Conflict - Controlled	0.27710	0.15503	0.15771	1.724	NS	0.28542	0.08147	0.00954
Q_{IV}, Subduedness - Independence	-1.60539	-0.99742	0.59578	7.261	$<.01$	0.30403	0.09243	0.01097
B, Less Intell. - More Intell.	0.13154	0.09701	0.11196	1.380	NS	0.30871	0.09530	0.00287
G, Expedient - Conscientious	-0.48204	-0.34754	0.19076	6.385	$<.05$	0.31280	0.09785	0.00254
Q_4, Relaxed - Tense	-1.27132	-0.97027	0.41476	9.395	$<.01$	0.31773	0.10095	0.00310
Q_1, Conservative - Experimenting	0.36018	0.26624	0.16750	4.624	$<.05$	0.32335	0.10455	0.00360

TABLE VI-24 (continued)

DEPENDENT VARIABLE: ACL Endurance

Multiple R
R Square
Adjusted R Square
Standard Error

Analysis of Variance
Regression
Residual

					DF	Sum of Squares	Mean Square	F

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
16PF, Factor (Continued):								
E, Humble - Assertive	0.81831	0.58614	0.32371	6.390	<.05	0.33572	0.11271	0.00815
H, Shy - Venturesome	0.59310	0.44877	0.19163	9.579	<.01	0.34070	0.11607	0.00337
Q_I, Introversion - Extroversion	-0.73781	-0.43442	0.55225	1.785	NS	0.35434	0.12556	0.00948
O, Placid - Apprehensive	-1.10413	-0.77047	0.35179	9.851	<.01	0.36284	0.13166	0.00610
Q_{II}, Low Anxiety - High Anxiety	2.81520	1.82403	0.91006	9.569	<.01	0.37301	0.13914	0.00748
C, Affected - Emotionally Stable	0.69460	0.51456	0.24530	8.018	<.01	0.41775	0.17452	0.03538
N, Forthright - Shrewd	-0.10733	-0.07416	0.13413	0.640	NS	0.42084	0.17711	0.00259
Q_2, Group-dependent - Self-suffic.	-0.02592	-0.01821	0.22400	0.013	NS	0.42320	0.17910	0.00199
Q_{III}, Tender-minded, emotionality - Tough Poise	-0.19416	-0.15221	0.21460	0.819	NS	0.42497	0.18060	0.00150
A, Reserved - Outgoing	-0.15720	-0.11518	0.21719	0.524	NS	0.42805	0.18322	0.00263
(Constant)	0.13474							

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importance as predictors of observation and inference. The variables
sex and cognitive complexity were included as predictors in all analyses
because sex was the most consistently appearing significant variable and
because both sex and cognitive complexity were expected to yield inter-
esting interaction results. Therefore, additional predictor variables
were derived in the form of interactions among demographic variables and
the 16PF factors and between cognitive complexity and each of the signi-
ficant 16PF variables. The results of these analyses are presented in
Tables VI-25 through VI-33.

Table VI-25 shows a significant direct effect for Differentiation
(one of the elements of cognitive complexity) and an interaction effect
of cognitive complexity by the 16PF factor Shy-Venturesome. Interestingly,
a complexity component again has a negative Beta weight, indicating that
as differentiation scores increase, the ability to correctly observe events
in a film decreases. The interaction displays a tendency, among high-
complexity subjects, for venturesome people to be better observers than
shy people. This is somewhat in contradiction to Turner, who finds that
introverted people are better observers than extroverted people (Table VI-26).

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COGNITIVE
COMPLEXITY

</div>

		High	Low
16PF, Factor H, Shy - Venturesome	High	9.707	9.042
	Low	8.848	8.978

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Table VI-26: Cell Means for Cognitive Complexity -
16PF Factor H Interaction

</div>

DEPENDENT VARIABLE: Film Observation Score

Multiple R	0.20523	Analysis of Variance	DF	Sum of Squares	Mean Square	F
R Square	0.04212	Regression	2.	54.08945	27.04473	4.02332 ($p < .05$)
Adjusted R Square	0.03165	Residual	183.	1230.12348	6.72199	
Standard Error	2.59268					

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
Differentiation Cognitive Complexity (16PF, Factor N, Shy - Venturesome)	- 0.06758	- 0.26082	0.02407	7.884	$<.01$	0.13989	0.01957	0.01957
	0.00269	0.19280	0.00130	4.308	$<.05$	0.20523	0.04212	0.02255
(Constant)	10.14244							

TABLE VI-25: Regression Analysis of Combined Variables on Film Observation Score

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Tables VI-27 through VI-29 again show the dominance of sex as a predictor variable in the skills of greatest interest in this study. Either independently or in interaction, females significantly outperform males in Group Discussion Observation and in both inference tasks. In addition, the R^2 for sex on observation is almost .18, which, by standards exhibited in these data, is very high.

Cognitive complexity appears once by itself in Table VI-28. Again complexity is a negative factor in predicting inference scores. Another interesting result is that group-dependent subjects are better at inference about Bob and Mary Jane than self-sufficient subjects (Table VI-28). Perhaps dependence leads to greater insight about other people than self-sufficiency.

A rather interesting phenomenon occurs in the prediction of ACL self-evaluation scores. Although sex still appears, among the five ACL scales which had significant Beta's, two 16PF scales, Trusting-Suspicious and Practical-Imaginative, are the best predictors. (See Tables VI-30 through VI-34.)

Suspicious subjects are significantly better predictors of self-evaluations on ACL self-confidence, self-control, and personal adjustment scales (Tables VI-30, 31, and 32). Among high complexity subjects they are also better in inferring self-evaluations on the Need for Achievement scale, but among low complexity subjects there is no difference between trusting and suspicious subjects (Tables VI-34 and VI-35).

In general, practical subjects seem to be more accurate predictors of other people's self-evaluation on ACL Endurance and Need for Achievement than are imaginative subjects. This situation is somewhat distorted by the

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DEPENDENT VARIABLE: Discussion Group Observation Score

Multiple R   0.43640
R Square   0.19044
Adjusted R Square 0.18160
Standard Error   1.53601

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2.	101.56789	50.78395
Residual	183.	431.75408	2.35951

F
21.52490 (p<.01)

Variable	B	Beta	Standard Error B	F	p.	Multiple R	R Square	R Square Change
Sex	- 0.72669	- 0.42853	0.11298	41.369	<.01	0.42199	0.17808	0.17808
Cognitive Complexity X 16PF Factor C, Affected - Emotionally Stable	- 0.00110	- 0.11140	0.00066	2.796	NS	0.43640	0.19044	0.01237
(Constant)	9.20574							

TABLE VI-27: Regression Analysis of Combined Variables on Group Discussion Observation Score

DEPENDENT VARIABLE: Mean of Film Inference Scores on Bob and Mary Jane

Multiple R	0.34153	
R Square	0.11664	
Adjusted R Square	0.10208	
Standard Error	2.34056	

Analysis of Variance	DF	Sum of Squares	Mean Square	F ($\alpha<.01$)
Regression	3.	131.65017	43.88339	8.01055
Residual	182.	997.03208	5.47820	

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
Sex	−0.66226	−0.26845	0.17547	14.245	<.01	0.21495	0.04620	0.04620
16PF Scale Q2, Group-dependent - Self Sufficient	−0.30017	−0.22709	0.09346	10.315	<.01	0.31725	0.10065	0.05444
Cognitive Complexity	−0.01273	−0.12808	0.00701	3.295	NS	0.34153	0.11664	0.01599
(Constant)	12.37649							

TABLE VI-28: Regression Analysis of Combined Variables on Film Inference Bob and Mary Jane

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DEPENDENT VARIABLE: Discussion Group Inference Score

Multiple R   0.53121
R Square   0.10970
Adjusted R Square 0.09997
Standard Error   2.79914

Analysis of Variance

	DF	Sum of Squares	Mean Square	F
Regression	2.	176.67419	88.33710	11.27443 ($p<.01$)
Residual	183.	1433.83684	7.83517	

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
Sex X 16PF Scale O, Placid-Apprehensive	-0.15260	-0.30086	0.03582	18.147	<.01	0.27047	0.07315	0.07315
Insurance X 16PF Scale O, Placid-Apprehensive	0.14211	0.19357	0.05185	7.512	<.01	0.33121	0.10970	0.03655
(Constant)	28.40390							

TABLE VI-29: Regression Analysis of Combined Variables
on Group Discussion Inference Score

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DEPENDENT VARIABLE: Inference Scores on ACL Self Confidence Scale

				F
Multiple R	0.20220			
R Square	0.04088			
Adjusted R Square	0.03567			
Standard Error	2.82117			

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	1.	62.42538	62.42538	7.84339 (p<.01)
Residual	184.	1464.45216	7.95898	

Variable	B	Beta	Standard Error B	F	p
16PF, Scale L, Trusting-Suspicious	-0.29017	-0.20220	0.10361	7.843	<.01
(Constant)	7.57947				

TABLE VI-30: Regression Analysis of Combined Variables on ACL Self-Confidence Scale

DEPENDENT VARIABLE: Inference Scores on ACL Self-Control Scale

Multiple R   0.28344
R Square   0.08034
Adjusted R Square 0.06518
Standard Error   1.81895

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	3.	52.60177	17.53392	5.29954 ($p<.01$)
Residual	182.	602.16107	3.30858	

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
Sex	- 0.36797	- 0.19584	0.13468	7.464	<.01	0.16957	0.02875	0.02875
16PF, Scale L, Trusting - Suspicious	- 0.18466	- 0.19649	0.06780	7.418	<.01	0.24622	0.06062	0.03187
16PF, Scale I, Tough-minded Tender-minded	- 0.14106	- 0.14137	0.07141	3.902	<.05	0.28344	0.08034	0.01971
(Constant)	5.91342							

TABLE VI-31: Regression Analysis of Combined Variables on ACL Self-Control Scale

DEPENDENT VARIABLE:

Inference Scores on ACL Personal Adjustment Scale

		Analysis of Variance	DF	Sum of Squares	Mean Square	F
Multiple R	0.26288	Regression	3.	77.32457	25.77486	4.50356 (p<.01)
R Square	0.06910	Residual	182.	1041.62643	5.72322	
Adjusted R Square	0.05376					
Standard Error	2.39233					

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
Marital Status	- 0.51113	- 0.15533	0.23860	4.589	<.05	0.17580	0.03090	0.03090
16PF, Scale L, Trusting - Suspicious	- 0.20976	- 0.17075	0.08823	5.653	<.05	0.23815	0.05672	0.02581
Sex X 16PF, Scale L, Trusting - Suspicious	- 0.04473	- 0.11326	0.02874	2.422	NS	0.2t288	0.06910	0.01239
(Constant)	5.76329							

TABLE VI-32: Regression Analysis of Combined Variables on ACL Personal Adjustment Scale

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Inference Scores on ACL Need-for-Achievement Scale

DEPENDENT VARIABLE:

Multiple R   0.27278
R Square   0.07441
Adjusted R Square 0.05915
Standard Error   3.27776

Analysis of Variance	DF	Sum of Squares	Mean Square	F
Regression	3.	157.19821	52.39940	4.87720 (p<.01)
Residual	182.	1955.36062	10.74374	

Variable	B	Beta	Standard Error B	F	P	Multiple R	R Square	R Square Change
Cognitive Complexity X 16PF, Scale L, Trusting - Suspicious	- 0.00690	- 0.37014	0.00190	13.150	<.01	0.16695	0.02787	0.02787
Cognitive Complexity X 16PF, Scale M, Practical - Imaginative	0.00473	0.26289	0.00183	6.643	<.05	0.25271	0.06386	0.03599
Sex X 16PF, Scale M, Practical - Imaginative	- 0.05528	- 0.10403	0.03838	2.074	NS	0.27278	0.07441	0.01055
(Constant)	7.27527							

TABLE VI-33: Regression Analysis of Combined Variables on ACL Need-for-Achievement Scale

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DEPENDENT VARIABLE: Inference Scores on ACL Endurance Scale

Multiple R   0.27449
R Square   0.07534
Adjusted R Square   0.06524
Standard Error   2.54023

Analysis of Variance

	DF	Sum of Squares	Mean Square	F
Regression	2.	96.22160	48.11080	7.45582 (p<.01)
Residual	183.	1180.85882	6.45278	

Variable	B	Beta	Standard Error B	F	p	Multiple R	R Square	R Square Change
Insurance X 16PF, Scale M, Practical - Imaginative	- 0.12028	- 0.22272	0.04056	8.793	<.01	0.25627	0.06568	0.06568
Sex X 16PF, Scale M, Practical - Imaginative	- 0.04293	- 0.10390	0.03103	1.914	NS	0.27449	0.07534	0.00967
(Constant)	4.99302							

TABLE VI-34:   Regression Analysis of Combined Variables on ACL Endurance Scale

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COGNITIVF
COMPLEXITY

	High	Low
16PF, Factor L, Trusting - Suspicious Suspicious	5.887	6.959
Trusting	7.872	6.788

Table VI-35: Cell Means for Cognitive Complexity -
16PF Factor Trusting-Suspicious

addition of Complexity level and Insurance vocation. Low complexity

imaginative subjects are particularly poor inferrers about Need for

Achievement, and practical insurance salespersons are particularly good

at inferring self-evaluation on the Endurance scale (Tables VI-36 and VI-37).

COGNITIVE
COMPLEXITY

	High	Low
16PF, Factor M, Practical - Imaginative Imaginative	6.667	7.138
Practical	6.393	6.436

Table VI-36: Cell Means on Need for Achievement
for the Interaction of Cognitive
Complexity and 16PF Practical-
Imaginative Scale

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	Insurance	Not Insurance
Imaginative	4.352	5.977
Practical	3.533	5.333

16PF, Factor M, Practical - Imaginative

Table VI-37: Cell Means on Endurance for the Interaction of Insurance Vocation and 16PF Practical-Imaginative Scale

The other significant predictors are more isolated cases and will not be described in detail here.

Effects of Focusing Instructions

In each discussion group one person, "A", was instructed to focus his attention on one other--"B". The other three persons in each group (including person B) were not so instructed and are presumed to have distributed their attention generally. Two approaches were taken in analyzing data on this question: (1) were "A's" inference and observation scores on "B" significantly better than "A's" scores on persons "C" and "D"; and (2) were "A's" scores on "B" significantly better than "C's" and "D's" scores on "B". In testing both of these questions we examined the validity of our focusing instructions and the effect of focusing in the small group situation used as our model of the "real world". A second set of questions concerned the effects of other variables when focusing differences do exist.

Answers to the first set of questions were provided by means of simple "t" tests. Table VI-38 shows that focusing instructions influenced A's to observe B's more accurately than they observed C's and D'c, but that C's and D's observations of B were not significantly less accurate than A's.

	A's Observation of B	A's Observation of C & D
mean	9.34	8.574
σ	2.416	2.013
N	47	47

$$t_{46} = 2.015, \ p < .05$$

	A's Inference on B	A's Inference on C & D
mean	27.291	27.842
σ	4.216	3.295
N	46	46

$$t_{45} = 0.596, \ NS$$

	A's Observation of B	Mean of C & D's Obs. of B
mean	9.340	8.702
σ	2.416	1.893
N	47	47

$$t_{92} = 1.425, \ NS$$

	A's Inference on B	Mean of C & D's Inf. on B
mean	27.291	27.889
σ	4.216	4.019
N	46	46

$$t_{92} = 0.327, \ NS$$

Table VI-38: The Effects of Focusing Instructions on Discussion Group
Observation and Inference

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In other words, our instructions seemed to cause A's to pay more attention to B's, to the exclusion of C's and D's, but that this did not help A's to become better overall observers than C's and D's, even when observing B's. Focusing instructions had no influence on the accuracy of inferences; A observed C and D about as well as he did B, while C and D did as well as A in making inferences about B. The low correlations between inference and observation results, to be discussed next, provide some evidence that focusing would not figure significantly in inference tasks as they were designed in this study. If inference is largely unrelated to observation, then being a better observer of one person would not seem to provide much help in making better inferences.

Consequently, the second set of questions is relevant only to the difference between A's observations of B and his observations of C and D. To provide an answer, a stepwise multiple regression analysis was run with the above difference score as the dependent variable, and sex, cognitive complexity, and the interaction of sex and cognitive complexity as predictor variables.* The results of the analysis indicated that none of the independent variables were significant; that is, none accounted for a sufficient amount of the variance in the difference scores to be included in a regression equation. We may conclude that the differences were likely due to the focusing instructions alone.

Film Inference and Observation Scores as Predictors of Interpersonal Inference and Observation Scores

The question of using the film observation and inference results as predictors of interpersonal scores has important practical aspects. If

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* The small N (46) permitted the entry of only three independent variables; those named were selected as being the most likely predictors.

the actualization group film could be used as a substitute for more complicated paper-and-pencil test or for "real world" testing, a significant savings could be made. In order to provide a basic first test of that possibility, the four observation and inference scores were correlated together in a single matrix. The results of that analysis appear in Table VI-39. It is clear that in terms of explained common variance, none of these tests is particularly predictive of any other, despite statistically significant r's in three cases. In fact, the cases with potentially greatest interest (those boxed) had the smallest absolute r's. Because of these results, no further effort was made to determine the relationship among these variables. Apparently observing and inferring from films and from interpersonal situations are quite different functions;or at least they are as they were presented in this study.

	OGIS	FIS	FOS
Discussion Group Observation Score	.15*	.12*	.05
Discussion Group Inference Score		.06	.16*
Film Inference Score			.05

*p ≤ .05

Table VI-39: Correlation Matrix of Observation and
Inference Scores

COVARIANCE ANALYSIS

PAS

The sponsor's interest in the PAS prompted its inclusion in this study. The WAIS (scoring basis for the PAS) was administered to 107 subjects who later took part in Phases II and III of the project. A rudimentary

analysis of these data will be presented below. Because PAS types are nominal, the regression analysis could be not used to test their effects on observation and inference scores. Thus, in order to test for these relationships and to include some of the important variables from the regression analysis, an analysis of covariance procedure was adopted. This allowed the addition of interval variables, normal level (I.Q.), and cognitive complexity level as covariates, and sex as an additional nominal variate.

To these three variables was added one of three types of PAS variable: (1) separate dimensions; (2) primitive level; and (3) basic level. The final model was in each instance (for each observation and inference score) a two-way analysis of covariance with two covariates. Only those runs which slowed significant effects for a PAS variable or normal score will be discussed all non-significant results or those which showed on sex as significant appear in Appendix N.

As part of our examination of this area we enlisted the help of the developer of PAS, Dr. John Gittinger made several suggestions about how to analyze the PAS data and also offered a set of hypotheses. Our original objective was not to provide a controlled setting for hypothesis testing, but we had an interesting opportunity for a somewhat more formal approach and therefore, offer the following set of hypotheses:

    (1)   That EA's should be best at observation

    (2)   That IU's should be worst at observation

    (3)   That ER's should be worst at inference

    (4)   That EF's should be best at inference.

Table VI-40 shows a significant interaction effect between sex and the EI dimension on film observation. A similar interaction exists for

TABLE VI-40

Analysis of Covariance for PAS

Film Observation by Externalizer-Internalizer Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	28.741	2	14.370	2.263	0.107
NORMAL	6.340	1	6.340	0.998	0.999
CCS3	17.268	1	17.268	2.719	0.098
MAIN EFFECTS	7.335	2	3.668	0.578	0.999
CSEX	7.171	1	7.171	1.129	0.291
EI	0.020	1	0.020	0.003	0.999
2-WAY INTERACTIONS	43.004	1	43.004	8.773	0.010
CSEX EI	43.004	1	43.004	6.773	0.010
EXPLAINED	79.080	5	15.816	2.491	0.036
RESIDUAL	6 4.967	100	6.350		
TOTAL	714.047	105	6.800		.

N=106

COVARIATE	BETA
NORMAL	-0.033
CCS3	-0.016

the RF dimension (Table VI-41). Tables VI-42 and VI-43 exhibit the unadjusted and adjusted deviations from the grand mean and provide an idea of the direction of differences. On Table VI-44 a significant main effect for the EI dimension on film inference is indicated. The unadjusted mean for Externalizers is 9.05, and for Internalizers it is 10.62. Thus, Internalizers do substantially better at this function than do Externalizers.

A final interaction between sex and the RF dimension occurs for Group Discussion Inference score (Table VI-45). Table VI-46 again provides deviation from the grand mean for each variable.

Primitive level shows significant relationships with Group Discussion Inference in Main Effects and for sex interaction. In terms of main effects it appears that ERU's are the poorest inferrers, and EFU's are the best. This result follows exactly the prediction made by Gittinger (numbers 3 and 4). It should , however, be kept in mind that these effects may be somewhat modified by sex and that this possibility is not shown in our results tables.

Analyses were also run against Basic Level types using the same covariance model and variables. In this case, however, there were no significant results on the PAS categories.

A final finding resulting from this analysis is that normal score is positively related to Group Discussion Inference level, i.e., as I.Q. increases, so does ability to correctly infer about the behavior of others in an interpersonal situation (Table VI-47).

PAS and Cognitive Complexity: As part of a continuing interest in the relationship between PAS personality types and Cognitive Complexity level, an analysis of covariance was done on personality dimensions

TABLE VI-41

Analysis of Covariance for PAS

Film Observation by Regulated-Flexible Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF OF
COVARIATES	28.741	2	14.370	2.294	0.104
NORMAL	6.340	1	6.340	1.012	0.318
CCS3	17.268	1	17.268	2.757	0.096
MAIN EFFECTS	9.113	2	4.556	0.728	0.999
CSEX	6.245	1	6.245	0.997	0.999
RF	1.798	1	1.798	0.287	0.999
2-WAY INTERACTIONS	49.893	1	49.893	7.966	0.006
CSEX RF	49.893	1	49.893	7.966	0.006
EXPLAINED	87.747	5	17.549	2.802	0.021
RESIDUAL	626.301	100	6.263		
TOTAL	714.047	105	6.800		

N=106

COVARIATE	BETA
NORMAL	-0.033
CCS3	-0.016

TABLE VI-42

Sex and EI Deviations on Film Inference

VARIABLE + CATEGORY	N	UNADJUSTED DEVIATION	BETA	ADJUSTED FOR INDEPENDENTS DEVIATION	BETA	ADJUSTED FOR + COVARIATES DEVIATION	BETA
Sex							
1	56	-0.31				-0.25	
1	50	0.35				0.28	
			0.13				0.10
EI							
1	43	-0.04				-0.02	
2	63	0.03				0.01	
			0.01				0.01

MULTIPLE R SQUARED   0.051
MULTIPLE R   0.225

GRAND MEAN = 8.92

TABLE VI-43

Sex and RF Deviations on Film Inference

VARIABLE + CATEGORY	N	UNADJUSTED DEVIATION	BETA	ADJUSTED FOR INDEPENDENTS DEVIATION	BETA	ADJUSTED FOR + COVARIATES DEVIATION	BETA
Sex							
-1	56	-0.31				-0.23	
1	50	0.35	0.13			0.26	0.10
RF1							
1	58	0.17				0.12	
2	48	-0.20	0.07			-0.14	0.05

MULTIPLE R SQUARED 0.053
MULTIPLE R 0.230

Grand Mean = 8.92

TABLE VI-44

Analysis of Covariance for PAS

Film Inference by Externalizer-Internalizer Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	14.241	2	7.120	1.185	0.310
NORMAL	5.197	1	5.197	0.865	0.999
CCS3	6.293	1	6.293	1.048	0.310
MAIN EFFECTS	62.754	2	31.377	5.224	0.007
CSEX	7.316	1	7.316	1.218	0.272
EI	45.539	1	45.539	7.581	0.007
2-WAY INTERACTIONS	0.007	1	0.007	0.001	0.999
CSEX EI	0.007	1	0.007	0.001	0.999
EXPLAINED	77.002	5	15.400	2.564	0.031
RESIDUAL	600.682	100	6.007		
TOTAL	677.684	105	6.454		

N=106

COVARIATE	BETA
NORMAL	-0.029
CCS3	-0.010

TABLE VI-45

Analysis of Covariance for PAS

Group Discussion Inference by Regulated-Flexible Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	52.449	2	16.224	2.441	0.090
NORMAL	31.981	1	31.981	4.812	0.029
CCS3	3.121	1	3.121	0.470	0.999
MAIN EFFECTS	56.507	2	28.254	4.251	0.017
CSEX	53.549	1	53.549	8.058	0.005
RF	0.514	1	0.514	0.077	0.999
2-WAY INTERACTIONS	138.929	1	138.929	20.905	0.001
CSEX RF	138.929	1	138.929	20.905	0.001
EXPLAINED	227.885	5	45.577	6.858	0.001
RESIDUAL	664.575	100	6.646		
TOTAL	892.458	105	8.500		

COVARIATE	BETA
NORMAL	0.073
CCS3	-0.007

N=106

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TABLE VI-46:

Analysis of Covariance for PAS

Group Discussion Inference by Primitive Level and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	32.449	2	16.224	2.706	0.071
NORMAL	31.981	1	31.981	5.335	0.022
CCS3	3.121	1	3.121	0.521	0.999
MAIN EFFECTS	161.458	8	20.182	3.367	0.002
CSEX	43.212	1	43.212	7.208	0.008
PL	105.465	7	15.066	2.513	0.021
2-WAY INTERACTIONS	170.989	7	24.427	4.075	0.001
CSEX PL	170.990	7	24.427	4.075	0.001
EXPLAINED	364.896	17	21.464	3.580	0.001
RESIDUAL	527.562	88	5.995		
TOTAL	892.458	105	8.500		

COVARIATE	BETA
NORMAL	0.073
CCS3	-0.007

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TABLE VI-47:

Sex and PL Deviation on Group Discussion Inference

VARIABLE + CATEGORY	N	UNADJUSTED DEVIATION	BETA	ADJUSTED FOR INDEPENDENTS DEVIATION	BETA	ADJUSTED FOR + COVARIATES DEVIATION	BETA
Sex							
-1	56	0.68				0.64	
1	50	-0.76				-0.71	
			0.25				0.23
PL							
1	10	1.05				1.18	
2	15	-2.21				-1.84	
3	4	-0.04				-0.16	
4	14	1.35				1.25	
5	12	1.05				1.11	
6	21	0.03				-0.05	
7	7	-0.38				-0.70	
8	23	-0.28				-0.33	
			0.38				0.35

MULTIPLE R SQUARED 0.217
MULTIPLE R 0.466

GRAND MEAN = 27.65

and primitive level types and complexity level. All three isolated dimensions (EI, RF, and AU) were run against complexity level, and none were found to be significant. The same procedure was used for primitive level with the same result. Thus, for these subjects and using the measurement instrument described herein, there seems to be no relationship between these personality types, as defined by PAS, and level of cognitive complexity.

VII. SUMMARY AND CONCLUSIONS

Two general problems were addressed in the beginning of this paper. They were: (1) the requirement to build a set of measures for observation and inference abilities; and (2) the need to identify available indicators which could serve as reliable predictors of observation and inference abilities. In addition, there were several sub-issues which were addressed in the analysis of the data. These included focusing, the role of cognitive complexity, the role of PAS, and the use of alternative stimulus settings as measures of observation and inference abilities. The study, designed to examine these problems, focused primarily on the first two. Thus, the procedures used were open-testing and multiple-measurement oriented, rather than tightly controlled or experimental.

In response to the first problem building instruments to measure observation and inference, a pair of stimulus settings and questionnaires was developed to measure observation and inference (about behaviors and attitudes) in each. In one case, the film stimulus, the conditions for virtually exact replication of our procedures and findings are available, and relatively easy to produce. In the other, certain aspects of the situation, e.g., interpersonal situation, four-person groups, conflict discussions, etc., are relatively easy to simulate, but the exact conditions of each group can never be reproduced. Therefore, there are essential elements of that situation which are perceived as critical to the simulation of "real world" behavior. The single most important of these is interaction with other people at some level, preferrably at a level which could cause some stress and lead to modification of comfortable, unguarded behavior patterns.

The second element in developing measurement instruments is finding the appropriate questions. Ideally the questions should be closely related to the kinds of problems faced in the real world. In this study that was not possible, so certain assumptions had to be made about the appropriate kinds of material to include. The extent to which correct choices were made is one measure of the usefulness of the study findings. The choices made in this project were direct toward selecting behaviors which bordered on or were anti-social or which reflected political attitudes, because it was felt these were the kinds of things which might be of interest in the real world.

In addition, a conscious effort was made to frame the questions in terms of behavior rather than values or attitudes, because behavior is generally a much more reliable predictor of the future than less concrete cognitive functions. Therefore, a questionnaire was constructed which elicited responses about real behaviors which were appropriate for our subjects and which might be taken as indications of underlying attitudes or value systems, but which certainly might be indicative of future behaviors. How valid these instruments are can ultimately only be tested in a "real world" context.

But if we assume that they are valid, then a next important step is to develop a way to predict skills in inference behavior. One classic approach is to tie inference skills to observational skills. The reasoning, that inferences are based on what we observe and therefore better observers should be better inferrers, has a long history and may even be true. However, social psychologists have had a difficult time relating these realms. A second approach is to develop, either theoretically or empirically, a set of predictor variables which can help narrow the gap between random

selection and absolute certainty. This is essentially the approach
of all selection procedures.

In trying to respond to the second general problem, something was
taken from both sides. Observation questionnaires were developed to serve
as independent measures of a related skill and to act as potential substi-
tute measures for inferential skills. A substantial set of other potential
predictors, based on theoretical and empirical evidence, was also included.
The hope was to find some one or combination of these variables which
would reduce the chance element in identifying "good" inferrers.

The results of this effort were somewhat disappointing on several
grounds. First, although a number of statistically significant predictors
of inference and observation skills were found, none accounted for very
much of the variance. Sex was by far the best predictor, and it accounted
for only 18% of the variance at best. Other variables appeared several
times, but accounted for much less. The most important of these are
previous experience in the insurance business, practicality and suspicious-
ness (as measured in the 16PF), intelligence (normal score from the WAIS),
and cognitive complexity, although this was generally in the "wrong"
direction. A second, related factor was the absence of predictor variables
which were universally associated with all criteria variables, again with
the exception of sex. There was nothing which seemed to hold all of the
criteria variables together. Although sex (or specifically, the ability
of women to do significantly better than men in all of the tasks we tested)
could serve as a useful predictor, it is unclear just what it is about
being female that gives one these special skills. The interaction for
which we tested did not provide any startling clues in this area, either.

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The third ground for disappointment was the failure of cognitive complexity to play a large role in the prediction of relevant skills. In fact, complexity level was generally negatively related to observation and inference skills. At this point it would probably be idle speculation to pursue the potential holes in the theory or confounding factors that were interjected into the research methodology.

One thing is evident, however. If anyone expects to achieve a greater predictive capability, a considerably more controlled approach will be necessary. This study and others before it have taken an important step forward in defining many of the relevant variables and in identifying the problems and complexities of the observation and inference realms. Hopefully, future research will be directed at better-defined problem areas and more experimentally-oriented methodologies will be used. Specifically in terms of the results of this study, avenues for future work are (1) a breakdown of other variables associated with sex which help predict inferential skills; (2) a more tightly-controlled interpersonal interaction phase which isolates particular aspects of the inferring process; (3) better-defined goals which are tied to "real world" problems; and (4) a more careful examination of the PAS system and cognitive complexity as predictors, in whatever direction, of inference abilities.

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APPENDICES

APPENDIX A--TESTING PROCEDURES

SUMMARY

This Appendix consists of a detailed presentation of the procedures used and the instructions given during the course of the testing for this research. The testing was conducted in three phases. Phase I included the administration of (1) a cognitive complexity test; (2) a behavior questionnaire; (3) Form C or Form D of the 16PF; and, for approximately one-half of the subjects, (4) the Wexler Adult Intelligence Scale. Phases II and III were conducted approximately a week after Phase I. During Phase II, the subjects viewed a 24-minute film and completed a three-part Film Observation Questionnaire. Phase III consisted of a small group discussion, followed by the administration of a series of physical description and behavior questionnaires, and four Adjective Checklists. The complete instruments are presented in Appendices B through I.

PHASE I--SCREENING TEST

Preliminary Activities

Each subject initially received a manila envelope containing a Consent Form, the test instruments and answer sheets necessary for Phase I. The envelope also contained an index card with a number stamped thereon, which became the subject's identification number. Each instrument and answer sheet in the Phase I testing package was stamped with this same identification number, and the subjects were instructed to either save the card, or otherwise make sure that they remembered their identification number when they returned for Phases II and III of the testing. The subjects' names and identification numbers were never associated, and at no time did the experimenters know a subject's ID number.

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The testing began with the reading of the project description and preliminary instructions. (See Exhibit 1.) The subjects were asked to sign the Consent Form (Exhibit 2) included in their packet of question- naire materials, and to indicate the times they would be available to participate in Phases II and III.

Cognitive Complexity Test

The first test administered in Phase I was a cognitive complexity test. (See Appendix B.) This test was complete in approximately 20 minutes.

16PF

The second test in the series was the 16PF. Half of the subjects received test materials which included a Form C questionnaire and answer sheet, and half received the Form D questionnaire and answer sheet. Completion time for the 16PF was about 25 minutes.

Behavior Questionnaire

The third component of Phase I testing consisted of a 33-item "past behavior" questionnaire, and a 13-item demographic questionnaire, both of which were completed in 30-40 minutes. (These instruments are presented in Appendix C.)

Wexler Adult Intelligence Scale (WAIS)

Approximately half the subjects (107) were administered the WAIS. Selection of the subjects was accomplished by selecting every other male/ female, starting from the front of the testing room, and then reversing the procedure for the next group of subjects, i.e., every other male/female was selected starting from the rear of the testing room. This process resulted in the random selection of approximately one-half of the male and one-half of the female subjects. The subjects who were not selected

EXHIBIT 1

THIS RESEARCH IS A TWO-PART PROJECT WHICH IS DESIGNED TO IDENTIFY OBSERVATION
AND INFERENTIAL ABILITIES AND TO DETERMINE IF THERE ARE NATURAL CORRELATES OF THOSE
ABILITIES AMONG PERSONALITY VARIABLES, COGNITIVE FUNCTIONING, AND PREVIOUS EXPERIENCE.

IN THE FIRST PART WE ARE INTERESTED IN DETERMINING VARIOUS ASPECTS OF YOUR
BACKGROUND AND PERSONALITY. THESE ARE NOT TESTS AND WE URGE YOU TO ANSWER ALL
PARTS FULLY AND HONESTLY. IN MOST CASES THERE IS NO CORRECT ANSWER, OR EVEN A
"BEST" ANSWER. IN FACT, THE ONLY PROPER ANSWER IS WHAT YOU REALLY FEEL. IN ORDER
TO PROTECT THOSE WHO MAY FEEL THAT THEIR ANSWERS ARE SENSITIVE WE HAVE DEVISED A
SYSTEM TO KEEP ALL RESPONSES ANONYMOUS. THIS SYSTEM INVOLVES THE USE OF AN
IDENTIFICATION NUMBER WHICH EACH OF YOU WILL BE ASSIGNED DURING THIS SESSION.
THE NUMBER WILL ACT AS A SUBSTITUTE FOR YOUR NAME AND IT ENSURES ANONYMITY
BECAUSE NO ONE IS ABLE TO CONNECT YOUR NUMBER TO YOUR NAME EXCEPT YOU. YOU WILL
FIND A CARD STAMPED WITH YOUR NUMBER IN THE ENVELOPE OF QUESTIONNAIRE MATERIALS.
MAKE SURE YOU HAVE IT WHEN YOU LEAVE BEACUSE IT WILL BE NECESSARY FOR PARTICIPATION
IN PART TWO OF THE PROJECT. IN FACT, THOSE WITHOUT NUMBERS (I.E., IF YOU LOSE
YOUR NUMBER) WILL NOT BE ALLOWED TO TAKE PART IN THE SECOND, MORE LUCRATIVE
PHASE OF OUR RESEARCH.

PART 2 INVOLVES EXAMINATION OF YOUR SKILLS OF OBSERVATION AND INFERENCE.
YOU WILL SEE A FILM AND ANSWER A QUESTIONNAIRE ON THE PEOPLE IN THE FILM, AND YOU
WILL TAKE PART IN A SMALL GROUP DISCUSSION AND ANSWER QUESTIONS ABOUT THAT. IT
WILL TAKE ABOUT 2-1/2 HOURS AND WE WILL ASK YOU FOR AVAILABILITY TIMES DURING THIS
SESSION. WE WILL NOTIFY YOU BY PHONE OF THE FINAL MEETING TIME AND PLACE.

NOW THAT WE ARE ON THAT SUBJECT, YOU WILL BE PAID AT THE END OF PART 2. THOSE
WHO PARTICIPATE IN BOTH PARTS WILL RECEIVE $13. A FEW OF YOU, WE DO NOT KNOW WHO
AT THIS TIME, WILL TAKE PART ONLY IN PART 1. YOU WILL RECEIVE $5 FOR YOUR
PARTICIPATION. WE ARE PAYING MORE FOR THE SECOND PART BECAUSE IT IS SLIGHTLY
LONGER AND BECAUSE WE WANT TO INSURE THAT YOU WILL RETURN. IT IS IMPERATIVE
THAT THOSE WHO ARE CONTACTED COME BACK TO COMPLETE THE PROJECT. IF YOU DO NOT
THINK YOU WILL BE ABLE TO DO THAT PLEASE STOP NOW. INCIDENTLY, THE BASIS FOR
SELECTION OF PARTICIPANTS FOR PART 2 HAS NOTHING TO DO WITH YOUR TEST RESULTS.
IT WILL BE A MATTER OF SCHEDULING, SINCE WE MUST HAVE FOUR-PERSON GROUPS FOR
THAT PHASE. THOSE WHO DO NOT PARTICIPATE IN PART 2 WILL BE THOSE WHOSE OWN
SCHEDULE DOES NOT FIT WITH AT LEAST THREE OTHER PARTICIPANTS.

ANY QUESTIONS?

THERE WILL BE A COMPLETE DEBRIEFING AT THE END OF THE PROJECT. YOU WILL
BE NOTIFIED OF TIME AND PLACE WHEN YOU COME FOR PART 2.

LET'S BEGIN. FIRST, TAKE THE SHEET ENTITLED "CONSENT FORM" FROM THE TOP
OF YOUR PACKAGE OF QUESTIONNAIRES. READ IT AND SIGN IT. THE INFORMATION AT
THE BOTTOM WILL ENABLE US TO RECONTACT YOU, AND IS NEVER ASSOCIATED WITH YOUR
I.D. NUMBER.

(Let everyone do this)

NOW, TURN THIS SHEET OVER AND FILL IN THE TIMES THAT YOU WOULD BE
AVAILABLE, NEXT WEEK, TO TAKE PART IN A GROUP DISCUSSION.

(Give them times for which groups may be
scheduled. Ask them to give a 1st, 2nd
and 3rd preference, etc.)

(Collect sheets and begin testing.)

Exhibit 2

Consent Form

I have been informed (1) that the Observation-Inference Study is a research project, conducted by the Human Resources Research Organization (a non-profit research organization), which attempts to determine differences in observational and inferential techniques; (2) that the Screening Questionnaire is a part of that study; (3) that as a participant in the study I will be responding to the Screening Questionnaire; (4) that in responding to the questionnaire I will be answering some questions which may be personal, but that there is no risk of disclosure of my individual responses because all of my responses are anonymous; (5) that I will receive five dollars ($5.00) for completing my participation in the Screening Questionnaire phase of the study; (6) that there is a second phase of the study in which I may be asked to participate and for which I would receive an additional eight dollar ($8.00) payment (full details of the second phase would be presented prior to actual participation); (7) that any of my questions concerning the procedures followed in that part of the study in which I am a participant will be fully answered; and (8) that I may discontinue my participation in the study at any time. Having been thus informed in these matters, I affirm that I am voluntarily responding to this questionnaire and willingly participating in this study.

_____/_____/_____   _____
DATE   SIGNATURE

_____
STREET ADDRESS

_____
CITY

_____
PHONE NUMBER

_____
SEX

to be administered the WAIS were then dismissed. Trained WAIS adminis-
trators then conducted this phase of the testing, which required from
50 to 60 minutes.

Assignment to Groups

After the first week of testing (Phase I) was completed, the subjects'
names were randomly divided into groups of four. The only restrictions
placed upon this random division were that the groups be composed of all
male or all female members, and that all of the members of the group be
available at the same time. (At the beginning of the Phase I testing
each subject had been asked to indicate when he/she would be available.
See page 2, paragraph 3 of Exhibit 1.)

Subjects were then contacted by telephone (names and telephone numbers
were obtained from the Consent Forms) to inform them of the time they
should return for the group discussion. In some cases, subjects were
in fact not available at the times they had indicated they would be, so
that some reassignment of individuals was necessary as the scheduling
proceeded.

PHASE II--FILM OBSERVATION

Preliminary Activities

During Phase II, groups of 4 to 16 subjects viewed a 24-minute film,
and subsequently completed a three-part questionnaire about their obser-
vations of the film. (See Appendix L for a full discussion of the film that
was used in this phase of the research.)[*]

Before the film was run, subjects received the following instruction:

---

[*] The subjects who saw the film together consisted of 1 to 4 of the
pre-arranged discussion groups necessary for Phase III, but the
subjects did not know who the other members of their group were.

"In watching this film you will be focusing on two people--
Bob and Mary Jane. You should notice everything you can about
them. Upon conclusion of the film you will be asked questions
about both of these subjects concerning both physical character-
istics and behavior."

In addition, Bob and Mary Jane were identified by the testing monitor when
they first appeared on the screen.

Film Questionnaire Administration

At the conclusion of the film, the testing monitor distributed the

three-part Film Questionnaire. (See Appendices D, E, and F.) The three

parts of the questionnaire were so arranged that all of the subjects would

complete the "film observation" section first. The second and third

sections ("Bob" inference and "Mary Jane" inference) were randomly alter-

nated so that half of the subjects would complete the "Bob" questionnaire

before the "Mary Jane" questionnaire, and the other half would complete the

"Mary Jane" questionnaire first. Completion time for this phase of the

testing was approximately one hour, including the film viewing.

PHASE III--GROUP DISCUSSIONS

Preliminary Activities

Immediately after the completion of the Phase II testing, the subjects

were divided into the pre-determined groups of four. Each group was

assigned a discussion monitor (i.e., a graduate student whom the subjects

did not know), who took the group to a small, plain room containing four

chairs. A small card was lying face-down on each chair. After the

students had seated themselves, the cards were turned over to reveal the

designation "A", "B", "C" or "D."

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Instructions

The discussion monitor distributed instruction cards to each member of the group, according to their letter designations. Exhibit 3 shows the instructions given to each subject designated "A." Exhibit 4 shows the instructions given to individuals "B," "C," and "D." Subjects were asked to read the instructions silently while the discussion monitor read them aloud. The monitors did not read the third paragraph of the instructions given to the "A" individuals, which directed the "A's" to focus particularly upon the "B's." The instruction cards were then collected.

The subjects were then asked to take ten minutes to select a topic for subsequent discussion within the group. They were told to choose an issue upon which they could disagree, and were given some suggestions, e.g., politics, drugs, abortion, etc. The monitor then left the room for ten minutes, and upon his/her return, the discussion of the selected topic proceeded.

Discussion continued for 45-50 minutes, at which time the subjects were told that it was time to stop, and the Phase III questionnaires were distributed.

The function of the monitor within the group is set forth in Exhibit 5.

Discussion Group Observation Questionnaires

The first section of the Phase III testing consisted of four Physical Description Questionnaires. (This instrument is presented in its entirety in Appendix G.) The subjects were asked to turn their chairs away from the other group members so that they would not be able to see any other individual while completing these first four questionnaires. The discussion

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leader was present to ensure that these directions were followed. Subjects

then completed one questionnaire describing their own physical appearance,

and one questionnaire describing each other member of the group. Thus,

the subject designated "A" in the group completed one questionnaire

describing himself/herself, and one questionnaire describing group

members "B," "C," and "D."

Discussion Group Inference Questionnaires

The second section of the Phase III testing was composed of three

"Discussion Questionnaires." (See Appendix H.) The subjects were directed

to return their chairs to the original positions facing the other group

members. The subjects then completed one "Discussion Questionnaire" for

each of the other group members. For example, the subject designated

"A" in the group received questionnaires which asked him/her to make

inferences about the past behavior of subjects "B," "C," and "D." The

letter designations of the other subjects had been filled in beforehand

for question 1, so that the question read, "Did B/C/D vote in the last

election?"

Adjective Checklists

During the third and final part of the Phase III testing, the subjects

were directed to complete four Adjective Checklists. (The checklists are

presented in Appendix I.) Subjects first completed a checklist describing

themselves, and then completed three other checklists in which they were

asked to infer how each of the other group members would fill out the

checklist describing themselves, i.e., the subject designated "A" completed

one checklist describing himself/herself and one checklist for each of

the subjects "B," "C," and "D."

Subjects generally required from 45 to 60 minutes to complete all three sections of the Phase III testing.

COMPENSATION AND DEBRIEFING

When the subjects had completed all of the questionnaires associated with the Phase III testing, they were paid $13 (by check) and dismissed. Subjects who, through scheduling or other difficulties, had participated in Phase I of the testing but had not returned for Phases II and III, received checks for $5 by mail.

A debriefing was conducted on the evening of the last day of the Phase II and III testing. All subjects had been informed of the time and place, and told that attendance was voluntary.

Exhibit 5

INSTRUCTIONS FOR DISCUSSION LEADERS

1. Leaders are there to help discussion along. They are <u>not</u> to express their own opinions. They may raise questions about particular aspects of the issue that they feel are not being discussed or which they feel would enliven the group's discussion, but they <u>should not</u> be drawn into the debate.

2. Leaders should try to get all group members to participate. Thus, if a subject has been quiet for a long period, the leader might say something like, "What do you think about that, Johnny?" or "Any other ideas, Suzy?" etc. As a group leader your objectives are to keep the discussion moving, get all Subjects to participate, and not to become the focal point of the discussion. The ideal situation would be to make your introduction and not have to say anything before "It's time to stop."

3. Some groups may find no issue upon which they disagree. Your function will be expanded in these cases. It will become your job to probe across a number of different subject areas and within areas to find out how each subject feels about the issue. <u>Gently</u> promote disagreement. Remember, the purpose of the group discussions is to get the group members to know each other a little better so that they can make valid observations and inferences at the end of the sessions. You must keep <u>them</u> talking.

Exhibit 3

YOU ARE SEATED IN POSITION "A"

In this part of the experiment, we will have a group discussion about a subject of mutual interest to you. At the end of this discussion, you will be asked about your observations of people during the discussion.

You will be answering questions about all of the people in the group.

You have been selected to make special observations. You should focus your attention to the person to your immediate left (position B). Do not show this card to anyone or indicate that you have this special assignment.

YOU ARE SEATED IN POSITION "B" ("C," "D")

In this part of the experiment, we will have a group discussion about a subject of mutual interest to you. At the end of this discussion, you will be asked about your observations of people during the discussion.

You will be answering questions about all of the people in the group.

APPENDIX B--COGNITIVE COMPLEXITY TEST

SCREENING   TEST

The purpose of this section is to determine how individuals view other people. In order to do this we are asking you to describe the various attributes and qualities of people in the following questionnaire. We are interested in finding out what aspects of other people, in general, you think are important when you are trying to understand or evaluate them.

Remove that stack of cards from the envelope. On each card separately write one of the characteristics (a word or phrase) that is important to you in your description or evaluation (or understanding) of people. You can put down whatever comes to your mind, since there is no one list of characteristics that can be considered as either "correct" or "incorrect". Every one of us sees things in a slightly different way. You should include both positive and negative characteristics.

You may have too many or too few cards, but this shouldn't bother you. Put down as many characteristics as you feel are necessary to understand people adequately. Work rapidly. You will have approximately 10 minutes to complete this part of the questionnaire. If you need more cards raise your hand. Do not stop simply because you have run out of cards.

AS AN EXAMPLE, if you were evaluating "cars", you might list:
A - big; B - bright; C - shiny; D - fast; E - safe; F - steel; G - expensive; H - square; I - comfortable; J - automatic; K - transportation; L - good pickup; M - Ralph Nader; N - pollution; O - compact; P - sleek.

DO NOT GO ON TO THE NEXT PAGE.

Lay out in front of you all the cards you used for listing the characteristics. Look them over carefully and notice whether they fall into some broad natural groups. If they do, arrange them into such groups.

Do so now.

Continuing our example: The attributes listed on the previous page may be divided into: (1) How the car looks (A, B, C and H); (2) How the car operates (D, I, J, E); and (3) The function of the car (K).

Stop when you have finished this operation.

DO NOT CONTINUE UNTIL INSTRUCTED TO DO SO.

Now look at your groups one by one and see whether these can't be broken down into subgroups. If they can, separate the cards accordingly. It is also possible that these subgroups can be broken down further, and so on.

When you have arranged all cards into groups and subgroups, list your groupings on the sheet provided as if they were points and subpoints of an outline. First, give names or titles to your groups and subgroups. Then in the right-hand column list the letters of all the characteristics that belong in the respective group or subgroup. Letters may be used in more than one group or subgroup if you feel the attribute has more than one aspect. If you have any questions please ask now.

FOR EXAMPLE:

1. Appearance

    A. Color -- B & C
    B. Size -- A & O
    C. Shape -- H & P

2. Operation

    A. Speed -- D & L
    B. Ride -- E & I

etc.

There are, of course, many other aspects of cars that could have been described and many different groups into which they could have been divided.

DO NOT GO ON TO NEXT PAGE UNTIL TOLD TO DO SO.

APPENDIX C--BEHAVIOR QUESTIONNAIRE AND

DEMOGRAPHIC QUESTIONNAIRE

INSTRUCTIONS: Answer all questions. Keep in mind that your responses are anonymous, so answer questions as honestly as possible.

1. Were you eligible to vote in the last general election (1974)?

    YES _____   NO _____   DON'T KNOW _____

2. Did you vote in that election?

    YES _____   NO _____

3. Indicate with a checkmark those political activities you have participated in within the past three years (back to the 1972 general election campaigns).

    a. _____ Talked with friends about the election/issues.

    b. _____ Tried to persuade others to vote for a particular candidate.

    c. _____ Talked to or written Congressman or other public official to let them know what you would like them to do on a public issue.

    d. _____ Contributed money to a political party.

    e. _____ Contributed money to a particular candidate.

    f. _____ Did canvassing or other public campaigning.

    g. _____ Worked as a volunteer at a clerical or administrative job on on a political campaign.

    h. _____ Ran for office. Which office? _____

4. Are you now or have you ever been a member of any politically active group other than the two major political parties (e.g., SDS, YAF, SDS, NAACP, ACLU, ADA, KKK, etc.)?

    _____ Yes, currently.

    4a. Which group(s)?

    _____

    _____

    _____

    _____ Yes, but no longer.   When? _____ years ago

    4b. Which group(s)?

    _____

    _____

    _____ No, never.   114

5. Which major political party are you affiliated with?

_____ American Independent

_____ Democratic

_____ Republican

6. Have you ever been in the military service?

YES _____   NO _____

    6a. If YES, which branch?

        _____ Army
        _____ Navy
        _____ Coast Guard
        _____ Marine Corps
        _____ Air Force

    6b. When? From _____ to _____
                       month/year   month/year

7. Are you a member of a veteran's organization?

YES _____   NO _____

    7a. If YES, which? _____

8. Have you ever taken any action to avoid being drafted into the military service?

YES _____   NO _____

    8a. If YES, what action? _____

    _____

9. Are you a member of any fraternal organization(s)? (If in college, fraternities; if out of college, other groups like K of C, Shriners, etc.)

YES _____   NO _____

    9a. If YES, which? _____

    _____

10. Do you own a handgun?

YES _____   NO _____

11. Have you ever taken barbiturates or amphetamines for other than medical reasons?

_____ Every day   _____ Once or twice in my life

_____ About once a week   _____ Never

_____ About once a month

12. Have you ever used narcotics (heroin, etc.) for other than medical reasons?

_____ Every day   _____ Once or twice in my life

_____ About once a week   _____ Never

_____ About once a month

13. Have you ever participated in a political demonstration, rally, march, or sit-in not associated with regular political party activity?

YES _____   NO _____

14. Have you ever committed an act of civil disobedience"

YES _____   NO _____

15. Which 3 of the 11 values listed below are most important to you? (List in order of preference. Use letters)

_____

_____

_____

16. Which 3 of the 11 values listed below are least important to you? (List least important first. Use letters)

_____

_____

_____

A. A good income   G. Freedom of choice or expression

B. Good interpersonal relationships H. Creative experience

C. A chance to contribute to   I. Relationships with close friends
   my community and society
                                     J. Adventure
D. Secure employment
                                     K. Family
E. Equality

F. Personal safety

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17. Is there some other value that is more important than any of those in the list (Question 15)?

YES _____   NO _____

17a. If YES, what is it?_____

18. Are you satisfied with your life or would you like to embark in some major new direction?

_____ Very satisfied with current course.
_____ Generally satisfied, but would like some changes.
_____ Generally dissatisfied, would like some major changes.
_____ Totally dissatisfied, would like a clean slate and a total new start.

19. How many different jobs have you held during the past 2 years?

_____ One
_____ Two
_____ Three
_____ Four
_____ Five or more

20. Have you ever been fired or asked to resign from a job?

_____ Once
_____ Twice
_____ Three times
_____ More than three times

21. Have you been involved in a fist or shouting fight during:

_____ The last month   _____ Four or more years ago
_____ The last year   _____ Never
_____ The last three years

22. In the past I have lied:

_____ In the most important circumstances
_____ In unimportant matters
_____ To save someone's feelings
_____ Never

23. I have cheated on exams

_____ When I was really unprepared
_____ When I thought I would fail if I didn't
_____ On unimportant quizzes
_____ If the opportunity accidentally presented itself
_____ Never

24. Were you ever arrested?

_____ Yes, once.
_____ Yes, more than once.
_____ No, never.

25. How often do you attend church?

_____ Every week.   _____ A couple of times a year.
_____ About 1-3 times a month.   _____ Never.
_____ Every few months.

26. Did you ever run away from home?

_____ Yes, once.
_____ Yes, twice.
_____ Yes, three or more times.
_____ No, never.

27. Check each of the following things you have done in the past (since you were 16):

a. _____ Hitch-hiked across the country.
b. _____ Traveled unaccompanied (without parents or guardian and not on a guided tour) through Europe.
c. _____ Spent some time (more than a few days) in a commune.
d. _____ Shoplifted for fun or excitement.
e. _____ Raced your car.
f. _____ Hunted.
g. _____ Flown an airplane or parachuted or skydived or deep sea dived.

28. Do you gamble (horse races, football games, state lottery, cards, etc.)?

_____ Every day.
_____ Several times a week.
_____ A few times a month.
_____ A few times a year.
_____ Once a year or less.
_____ Never.

29. Do you drink alcoholic beverages?

_____ Every day.
_____ Several times a week.
_____ A few times a month.
_____ A few times a year.
_____ Never.

30. Would you rather <u>live</u> than anything else?

_____ Yes   _____ No

31. Do you have a "creative" hobby or vocation, e.g., painting, sculpture, ballet, writing short stories, etc.?

_____ Yes   If yes, which?_____
_____ No

32. Are you very concerned about your physical safety?

_____ Yes   _____ No

33. Have you ever seriously contemplated or attempted suicide?

_____ Yes   _____ No

33a. If YES, how long ago? _____ years

V

1. **How do you describe yourself?**

   _____ American Indian
   _____ Black or Afro-American or Negro
   _____ Mexican American or Chicano
   _____ Puerto Rican
   _____ Other Latin American origin
   _____ Oriental or Asian American
   _____ White or Caucasian
   _____ Other _____

2. **How many brothers and sisters do you have?**

   _____ 1
   _____ 2
   _____ 3
   _____ 4
   _____ 5 or more

3. **What is the highest level of school you have completed?**

   _____ Did not graduate from high school
   _____ High school graduate
   _____ completed business or trade school
   _____ some college
   _____ Associate degree (2 year college)
   _____ B.A. or B.S.
   _____ Some graduate school
   _____ M.A. or M.S.
   _____ Law degree
   _____ PhD, M.D., E.D.

4. **What religion were you brought up in?**

   _____ Protestant
   _____ Roman Catholic
   _____ Other Christian
   _____ Jewish
   _____ Other (e.g., Eastern religions)
   _____ None

5. **How old are you?** _____

6. **What is your sex?** _____ Female _____ Male

7. What is [your] [the] approximate income before taxes [of your parents (or guardian)]? Include taxable and non-taxable income from all sources.

_____ Less than $3,000 a year (about $60 a week or less)
_____ Between $3,000 and $5,999 a year (from $60 to $119 a week)
_____ Between $6,000 and $7,499 a year (from $120 to $149 a week)
_____ Between $7,500 and $8,999 a year (from $150 to $179 a week)
_____ Between $9,000 and $10,4999 a year (from $180 to $209 a week)
_____ Between $10,500 ans $11,999 a year (from $210 to $239 a week)
_____ Between $12,000 and $13,499 a year (from $240 to $269 a week)
_____ Between $13,500 and $18,000 a year (from $300 to $359 a week)
_____ Over $18,000 a year (about $360 a week or more)
_____ I have no idea.

8. Which best describes the location of the place in which you live?

_____ In a rural or farming community
_____ In a small city or town of fewer than 50,000 people that is not a suburb of a larger place
_____ In a medium-sized city (50,000-100,000 people)
_____ In a suburb of a medium-sized city
_____ In a large city (100,000-500,000 people)
_____ In a suburb of a large city
_____ In a very large city (over 500,000 people)
_____ In a suburb of a very large city

9. What were your grades in school (ig highest completed is high school, use high school grades; if you attended college, use college grades- undergraduate.)?

_____ Mostly A's
_____ Mostly A's and B's
_____ Mostly B's and C's
_____ Mostly C's and D's
_____ Mostly D's and below

9a. What was your GPA?

_____ on a _____ point system

10. How much money do you have in the bank?

_____ None
_____ less than $500
_____ between $500 and $2500
_____ between $2500 and $10,000
_____ more than $10,000

11. If you have a life insurance policy, what is the face value of the policy?

$_____

_____ don't have a life insurance policy

12. What is your occupation (if full-time student, put student; if part-time student put student and job; if full-time employment be precise about your job)?

_____

  12a. If fully employed, how long have you held this job?

     ____yrs.

13. What is your marital status?

     ____Married
     ____Divorced
     ____Widow/widower
     ____Separated
     ____Single (never married)

APPENDIX D--FILM OBSERVATION TEST

Answer all of the following questions about the film that you have seen. Please indicate how sure you are that your answer is correct by marking the appropriate right hand column.

	How confident are you that your answer is correct?		
	Very Confident	Fairly Confident	Guessing

1. Did Mary Jane ever wear a dress in the film?

   Yes _____ ?   No _____   _____ _____ _____

*2. How many different outfits did Mary Jane wear?

   _____ One
   _____ Two
   _____ Three
   _____ Four   _____ _____ _____

*3. How many different outfits did Bob wear?

   _____ One
   _____ Two
   _____ Three
   _____ Four   _____ _____ _____

4. Did either person wear glasses?

   _____ Mary Jane
   _____ Bob
   _____ Both
   _____ Neither   _____ _____ _____

*5. Did either smoke?

   _____ Mary Jane
   _____ Bob
   _____ Both
   _____ Neither   _____ _____ _____

*6. In the first part of the film Mary Jane wore:

   _____ long earrings
   _____ A shiny pendant
   _____ A pearl necklace
   _____ No jewelry
   _____ None of the above   _____ _____ _____

   *Starred items indicate those used in the final determination of scale scores.

*7. Mary Jane always wore a sweater or blouse and slacks.

True _____   False _____   _____   _____   _____

8. Mary Jane wore her hair:

_____ Up
_____ Down over her shoulders
_____ In a ponytail   _____   _____   _____

9. Bob had:

_____ Long hair
_____ Curly hair
_____ Short hair   _____   _____   _____

*10. Did Bob or Mary Jane eat or drink anything?

_____ Bob ate something
_____ Bob drank something
_____ Mary Jane ate something
_____ Mary Jane drank something
_____ Neither ate or drank anything   _____   _____   _____

*11. In one scene Bob was sitting on the couch.

True _____   False _____   _____   _____   _____

12. What kind of "monster" did Mary Jane want to be?

_____ Sea nymph
_____ Troll
_____ Escape artist
_____ Forester   _____   _____   _____

*13. Did Mary Jane ever cry?

_____ Never
_____ Once
_____ Twice
_____ Three times   _____   _____   _____

14. Did Bob ever cry?

_____ Never
_____ Once
_____ Twice
_____ Three times   _____   _____   _____

15. Who told Bob he was crazy to be on the show?

_____ His wife
_____ His boss
_____ A person close to him
_____ A person he hardly knew   _____   _____   _____

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16. Who "won again?"

_____ Bob said Mary Jane did.
_____ Mary Jane said Bob did.
_____ Bob said the therapist did.
_____ Mary Jane said the therapist did.

*17. Who sat just to Bob's right (your left)?

_____ Mary Jane
_____ Therapist
_____ Jim
_____ Assistant Therapist

*18. How many people were in the group (in each scene)?

_____ Six
_____ Seven
_____ Eight
_____ Nine
_____ Ten

*19. What was the therapist's name?

_____ Sam Everett
_____ Bob Everett
_____ Everett Shostrom
_____ Jim Shore

*20. What was "Bob's secret?"

_____ He was a manipulator
_____ He was a transvestite
_____ He was afraid of women
_____ He was afraid of men

*21. How many therapists were there?

_____ One
_____ Two
_____ Three
_____ Four

22. What was the thing Bob and Mary Jane were trying to avoid?

_____ The therapist
_____ Themselves
_____ Contact with others
_____ Fear

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	Very Confident	Fairly Confident	Guessing

*23. Who was Bob's "biggest sucker?"

_____ The therapist
_____ Mary Jane
_____ Himself
_____ His wife

| | _____ | _____ | _____ |

*24. Who did Mary Jane need a part of?

_____ The therapist
_____ Bob
_____ The assistant therapist
_____ Bob and the therapist
_____ The therapist and the assistant therapist

| | _____ | _____ | _____ |

*25. Who did Bob want to make a speech?

_____ Mary Jane
_____ The therapist
_____ The assistant therapist

| | _____ | _____ | _____ |

26. Who did Bob fail?

_____ Mary Jane
_____ The therapist
_____ The assistant therapist

| | _____ | _____ | _____ |

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APPENDIX E--FILM INFERENCE QUESTIONNAIRE "BOB"

FILM QUESTIONNAIRE

Answer all of the following questions about Bob. You will probably be more sure of some answers than others. For those questions which require it, indicate how sure you are that your answer is correct by marking the appropriate right hand column. Indicate whether or not you think Bob is the kind of person who has done or is currently doing the following things:

| | | Yes | No | How confident are you that your answer is correct? | | |
				Very Confident	Fairly Confident	Guessing
1.	Is a hunter.					
*2.	Would tell her/his boss off.					
*3.	Would go mountain climbing.					
4.	Would shoplift.					
*5.	Was recently fired from a job.					
6.	Would use illegal drugs.					
7.	Would gamble.					
8.	Would quit her/his job without having another					
9.	Would be driven to earn more and more money.					
10.	Cheat on her/his income tax.					
*11.	Recently get involved in a fist or shouting fight.					
12.	Would be a homosexual.					
13.	Would attend church regularly or be very religious.					
14.	Would regularly attend football games.					
15.	Would try to get ahead socially.					
*16.	Would be a political conservative.					

*Starred items indicate those used in the final determination of scale scores.

		Yes	No	Very Confident	Fairly Confident	Guessing
17.	Would lie in important circumstances.	___	___	___	___	
*18.	Would lie in unimportant circumstances.	___	___	___	___	
19.	Would lie to save someone's feelings.	___	___	___	___	___
20.	Would never lie.	___	___	___	___	___
21.	Would have strong family ties.	___	___	___	___	___
22.	Would be strongly influenced by material wealth.	___	___	___	___	___
*23.	Would rather live than anything else.	___	___	___	___	___
*24.	Wants to win more than anything else.	___	___	___	___	___
*25.	Would have illicit sexual relationships.	___	___	___	___	___
*26.	Cheat on her/his spouse.	___	___	___	___	___
*27.	Would have a drinking problem.	___	___	___	___	___
28.	Would be politically liberal.	___	___	___	___	___
29.	Would be a "radical."	___	___	___	___	___
30.	Would participate in a political demonstration (e.g., anti-Vietnam or integration).	___	___	___	___	___
*31.	Be active in regular party politics.	___	___	___	___	___
32.	Belong to a non-party politically oriented group (e.g., NAACP, ACLU, John Birch Society, KKK, etc.)	___	___	___	___	___
*33.	Own a handgun.	___	___	___	___	___
*34.	Engage in creative hobbies (e.g., painting, sculpture, ballet, etc.)	___	___	___	___	___

		Yes	No	How confident are you that your answer is correct?		
				Very Confident	Fairly Confident	Guessing
35.	Would be highly concerned about physical safety.					
36.	Would be likely to move from job to job.					
* 37.	Would be dishonest in her/his business dealings.					
* 38.	Attempt suicide.					
39.	Do adventuresome things (e.g., skydive, skindive, parachute, drive in organized auto races, etc.)					
40.	Would get married again.					

APPENDIX F--FILM INFERENCE QUESTIONNAIRE--MARY JANE

FILM QUESTIONNAIRE *

    Answer all of the following questions about <u>Mary Jane</u>. You will probably be more sure of some answers than others. For those questions which require it, indicate how sure you are that your answer is correct by marking the appropriate right hand column. Indicate whether or not you think <u>Mary Jane</u> is the kind of person who has done or is currently doing the following things:

		Yes	No	How confident are you that your answer is correct?		
				Very Confident	Fairly Confident	Guessing
1.	Is a hunter.					
*2.	Would tell her/his boss off.					
3.	Would go mountain climbing.					
*4.	Would shoplift.					
5.	Was recently fired from a job.					
6.	Would use illegal drugs.					
7.	Would gamble.					
*8.	Would quit her/his job without having another					
*9.	Would be driven to earn more and more money.					
*10.	Cheat on her/his income tax.					
*11.	Recently get involved in a fist or shouting fight.					
12.	Would be a homosexual.					
13.	Would attend church regularly or be very religious.					
14.	Would regularly attend football games.					
15.	Would try to get ahead socially.					
*16.	Would be a political conservative.					

    *Starred items indicate those used in the final determination of scale scores.

	Yes	No	How confident are you that your answer is correct?		
			Very Confident	Fairly Confident	Guessing
17. Would lie in important circumstances.	___	___	___	___	___
*18. Would lie in unimportant circumstances.	___	___	___	___	___
*19. Would lie to save someone's feelings.	___	___	___	___	___
20. Would never lie.	___	___	___	___	___
21. Would have strong family ties.	___	___	___	___	___
*22. Would be strongly influenced by material wealth.	___	___	___	___	___
23. Would rather live than anything else.	___	___	___	___	___
*24. Wants to win more than anything else.	___	___	___	___	___
25. Would have illicit sexual relationships.	___	___	___	___	___
26. Cheat on her/his spouse.	___	___	___	___	___
27. Would have a drinking problem.	___	___	___	___	___
*28. Would be politically liberal.	___	___	___	___	___
*29. Would be a "radical."	___	___	___	___	___
*30. Would participate in a political demonstration (e.g., anti-Vietnam or integration).	___	___	___	___	___
31. Be active in regular party politics.	___	___	___	___	___
32. Belong to a non-party politically oriented group (e.g., NAACP, ACLU, John Birch Society, KKK, etc.)	___	___	___	___	___
*33. Own a handgun.	___	___	___	___	___
*34. Engage in creative hobbies (e.g., painting, sculpture, ballet, etc.)	___	___	___	___	___

	Yes	No	How confident are you that your answer is correct?		
			Very Confident	Fairly Confident	Guessing
* 35. Would be highly concerned about physical safety.	_____	_____	_____	_____	_____
36. Would be likely to move from job to job.	_____	_____	_____	_____	_____
* 37. Would be dishonest in her/his business dealings.	_____	_____	_____	_____	_____
* 38. Attempt suicide.	_____	_____	_____	_____	_____
*39. Do adventuresome things (e.g., skydive, skindive, parachute, drive in organized auto races, etc.)	_____	_____	_____	_____	_____
40. Would get married again.	_____	_____	_____	_____	_____

APPENDIX G--DISCUSSION GROUP OBSERVATION QUESTIONNAIRE--

PHYSICAL DESCRIPTION

PHYSICAL DESCRIPTION QUESTIONNAIRE [*]

Circle the letter of the alternative to each statement which best describes yourself.

[*]1. Predominant color of hair:

    a. Brown   d. Red
    b. Black   e. Gray or White
    c. Blond

[*]2. Hair Length:

    a. Long
    b. Short

[*]3. Color of Eyes:

    a. Brown   d. Green
    b. Blue   e. Hazel
    c. Gray

4. Race:

    a. Caucasian   d. Oriental
    b. Negro   e. Other
    c. Indian (American)

[*]5. Height:

    a. less than 5'   d. 5'7" - 5'9"
    b. 5'0" - 5'3"   e. 5'10" - 6'0"
    c. 5'4" - 5'6"   f. over 6'

[*]6. Weight:

    a. less than 110 pounds   e. 171 lbs. - 190 lbs.
    b. 111 lbs - 130 lbs   f. 191 lbs - 220 lbs.
    c. 131 lbs - 150 lbs.   g. more than 220 lbs.
    d. 151 lbs - 170 lbs.

7. Sex:

    a. Female
    b. Male

*Starred items indicate those used in the final determination of scale scores.

*8. Facial Hair:

   a. Moustache alone   c. Moustache and Beard
   b. Beard alone (nothing over   d. None
      top lip)

*9. General Build:

   a. Slim
   b. Average
   c. Heavy

*10. Visual Aids:

   a. Glasses
   b. Contact lenses
   c. None

*11. Main color of shirt or blouse worn today:

   a. Blue   f. Orange
   b. Red   g. Pink-Violet
   c. Brown   h. White
   d. Green   i. Black
   e. Yellow   j. Plaid

12. Main color of pants, shorts or skirt worn today:

   a. Blue   f. Orange
   b. Red   g. Pink-Violet
   c. Brown   h. White
   d. Green   i. Black
   e. Yellow   j. PPlaid

*13. Smoking habit during discussion:

   a. Cigarettes   c. Pipe
   b. Cigars   d. None

*14. Bracelets or watches worn today:

   a. Bracelets on either arm   c. Bracelet on one arm, watch on
   b. Watch on either arm   the other arm
                            d. None

*15. Rings worn today:

   a. 1 or 2 rings on any fingers   c. more than 4 rings on any fingers
   b. 3 or 4 rings on any fingers d. None

*16. Age:

    a. 17-20 years   d. 31-40 years
    b. 21-23 years   e. 41-50 years
    c. 24-30 years   f. more than 50 years

*17. Main color of shoes worn today:

    a. Black   e. Red
    b. Brown   f. Tan
    c. White   g. Other_____
    d. Blue

*18. Socks or stockings worn today?

    a. Yes
    b. No

    18a. If yes, what type or color? _____

*19. Main color of coat or sweater worn today?

    a. Blue   f. Orange
    b. Red   g. Pink-Violet
    c. Brown   h. White
    d. Green   i. Black
    e. Yellow   j. Plaid (basic color(s) _____

20. Do you have any visible scars or other distinguishing physical characteristics?

    a. Yes
    b. No

    If yes, what are they? _____

    _____

    _____

    _____

PHYSICAL DESCRIPTION QUESTIONNAIRE *

Circle the letter of the alternative to each statement which best describes
_____. (One copy each for the other group members)

*1. Predominant color of hair:

        a. Brown   d. Red
        b. Black   e. Gray or White
        c. Blond   f. Didn't notice

*2. Hair length:

        a. Long
        b. Short
        c. Didn't notice

*3. Color of Eyes:

        a. Brown   d. Green
        b. Blue   e. Hazel
        c. Gray   f. Didn't notice

4. Race:

        a. Caucasian   d. Oriental
        b. Negro   e. Other
        c. Indian (American)

*5. Height:

        a. less than 5'   d. 5'7" - 5'9"
        b. 5'0" - 5'3"   e. 5'10" - 6'0"
        c. 5'4" - 5'6"   f. over 6'
                                g. Didn't notice

*6. Weight:

        a. less than 110 pounds   e. 171 lbs. - 190 lbs.
        b. 111 lbs. - 130 lbs.   f. 191 lbs. - 220 lbs.
        c. 131 lbs. - 150 lbs.   g. more than 220 lbs.
        d. 151 lbs. - 170 lbs.
                                h. no idea

7. Sex:

        a. Female
        b. Male

*Starred items indicate those used in final determination of scale scores.

8. Facial Hair:

   a. Moustache alone
   b. Beard alone (nothing over top lip)
   c. Moustache and Beard
   d. None
   e. Didn't notice

*9. General Build:

   A. Slim
   b. Average
   c. Heavy

*10. Visual Aids:

   a. Glasses
   b. Contact lenses
   c. None
   d. Didn't notice

*11. Main color of shirt or blouse worn today:

   a. Blue
   b. Red
   c. Brown
   d. Green
   e. Yellow
   f. Orange
   g. Pink-Violet
   h. White
   i. Black
   j. Plaid, basic color(s) _____
   k. Didn't notice

12. Main color of pants, shorts or skirt worn today:

   a. Blue
   b. Red
   c. Brown
   d. Green
   e. Yellow
   f. Orange
   g. Pink-Violet
   h. White
   i. Black
   j. Plaid, basic color(s) _____
   k. Didn't notice

*13. Smoking habits during discussion:

   a. Cigarettes
   b. Cigars
   c. Pipe
   d. None
   e. Didn't notice

*14. Bracelets or watches worn today:

   a. Bracelets on either arm
   b. Watch on either arm
   c. Bracelet on one arm, watch on the other arm
   d. None
   e. Didn't notice

*15. Rings worn today:

   a. 1 or 2 rings on any finger
   b. 3 or 4 rings on any fingers
   c. More than 4 rings on any fingers
   d. None
   e. Didn't notice

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*16. Age:

    a. 17-20 years   d. 31-40 years
    b. 21-23 years   e. 41-50 years
    c. 24-30 years   f. more than 51 years
                              g. no idea

*17. Main color of shoes worn today:

    a. Black   e. Red
    b. Brown   f. Tan
    c. White   g. Other_____
    d. Blue   h. Didn't notice

*18. Socks or stockings worn today?

    a. Yes
    b. No

    18a. If yes, what type or color? _____

*19. Main color of coat or sweater worn today?

    a. Blue   f. Orange
    b. Red   g. Pink-Violet
    c. Brown   h. White
    d. Green   i. Black
    e. Yellow   j. Plaid, basic color(s) _____
                        k. Didn't notice

20. Did you notice any scars or other distinguishing marks?

    a. Yes   If Yes, describe_____
    b. No

21. Are there any other distinctive physical characteristics of how
          _____ looked or acted that you can think of?

    _____

    _____

    _____

    _____

APPENDIX H--DISCUSSION GROUP INFERENCE QUESTIONNAIRE

The following are a list of questions about the people with whom you were just discussing _____. You will probably recognize the questions from the previous questionnaire about your own activities in these areas. In this questionnaire, we would like you to give your best estimate of the past behavior of the other members of the group. We realize your discussion did not cover most of these areas, but we want you to make an effort to infer behaviors on all of the questions anyway. It is important that you answer all of the questions.
(One copy each for the other group members)

*1. Did _____ vote in the last general election?

_____Yes
_____No
_____No, too young

2. Indicate with a checkmark those political activities you think _____ has participated in within the past three years (back to the 1972 general election campaigns).

a. _____Talked with friends about the election/issues.

b. _____Tried to persuade others to vote for a particular candidate.

*c. _____Talked to or written Congressman or other public official to let them know what she/he would like them to do on a public issue.

d. _____Contributed money to a political party.

*e. _____Contributed money to a particular candidate.

*f. _____Did canvassing or other public campaigning.

*g. _____Worked as a volunteer at a clerical or administrative job on a political campaign.

h. _____Ran for office. Which office?_____

*3. Do you think _____ is currently a member of any politically active group, other than the two major political parties (e.g., NOW, YAF, SDS, NAACP, ACLU, KKK, etc.)?

Yes_____   No_____

*3a. If Yes, which group(s) would you say?_____

_____

*4. Do you think _____ has ever been a member of such a group?

Yes_____   No_____

*Starred items indicate those used in the final determination of scale scores.

*4a. If Yes, which group(s)?

_____

5. Has _____ ever been in the military service?

   Yes_____   No_____

   5a. If Yes, which branch?

        _____Army
        _____Navy
        _____Coast Guard
        _____Marine Corps
        _____Air Force

6. Is _____ a member of a veteran's organization?

   Yes_____   No_____

7. Has _____ ever taken any action to avoid being drafted into the
   military service?

   Yes_____   No_____

   7a. If Yes, what action would you say he has taken? _____

   _____

*8. Is _____ a member of any fraternal organization(s)? (If in college,
    sororities or fraternities; if out of college, other groups like K of C,
    Shriners, etc.)

    Yes_____   No_____

    *8a. If Yes, which? _____

    _____

*9. Does _____ own a handgun?

    Yes_____   No_____

*10. Has _____ ever taken barbiturates or amphetamines for other than
     medical reasons?

     _____Every day   _____Once or twice in her/his life

     _____About once a week   _____Never

     _____About once a month

*11. Has _____ ever used narcotics (heroin, etc.) for other than medical reasons?

_____Every day   _____Once or twice in his/her life

_____About once a week   _____Never

_____About once a month

*12. Do you think _____ has ever participated in a political demonstration, rally, march, or sit-in not associated with regular political party activity?

Yes_____   No_____

*13. Has _____ ever committed an act of civil disobedience?

Yes_____   No_____

*14. Which 3 of the following 11 values listed below does _____ feel are most important to him/her? (Use letters:)

_____

_____

_____

*15. Which 3 of the 11 values listed below does _____ feel are least important to him/her? (Use letters.)

_____

_____

_____

A. A good income

B. Good interpersonal relationships

C. A chance to contribute to her/his community and society

D. Secure employment

E. Equality

F. Personal safety

G. Freedom of choice or expression

H. Creative experience

I. Relationships with close friends

J. Adventure

K. Family

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*16. Is there some other value you think might be more important to
_____?

Yes_____   *If Yes, which?_____

No_____

*17. Do you think _____ is satisfied with her/his life or would she/he
like to embark in some major new direction?

_____Very satisfied with current course.
_____Generally satisfied, bout would like some changes.
_____Generally dissatisfied, would like some major changes.
_____Totally dissatisfied, would like a clean slate and a total
new start.

*18. How many different jobs would you say_____ has held during the
past 2 years?

_____One
_____Two
_____Three
_____Four
_____Five or more

*19. Has _____ ever been fired or asked to resign from a job?

_____Once
_____Twice
_____Three times
_____More than three times

*20. Has _____ been involved in a fist or shouting fight during:

_____the last month   _____four or more years ago
_____the last year   _____never
_____the last three years

21. In the past _____has lied:

_____ in the most important circumstances
_____ in unimportant matters
_____ to save someone's feelings
_____ never

*22. _____has cheated on exams

_____ when he/she was really unprepared
_____ when he/she thought he/she would fail if he/she didn't
_____ on unimportant quizzes
_____ if the opportunity accidentally presented itself
_____ never

*23. Was _____ ever arrested?

_____Yes, once
_____Yes, more than once
_____No, never

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*24. How often does _____ attend church?

_____ Every week   _____ A couple of times a year
_____ About 1-3 times a month   _____ Never
_____ Every few months

*25. Did _____ ever run away from home?

_____ Yes, once
_____ Yes, twice
_____ Yes, three or more times
_____ No, never

26. Check each of the following things you think _____ has done in the past (since she/he was 16):

*a. _____ Hitch-hiked across the country

*b. _____ Traveled unaccompanied (without parents or guardian and not on a guided tour) through Europe.

*c. _____ Spent some time (more than a few days) in a commune.

*d. _____ Shoplifted for fun or excitement.

*e. _____ Raced her/his car.

*f. _____ Hunted.

*g. _____ Flown an airplane or parachuted or skydived or deep sea dived.

*27. Does _____ gamble (horse races, football games, state lottery, cards, etc.)?

_____ Every day   _____ A few times a year
_____ Several times a week   _____ Once a year or less
_____ A few times a month   _____ Never

*28. Does _____ drink alcoholic beverages?

_____ every day
_____ several times a week
_____ a few times a month
_____ a few times a year
_____ never

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29. Does _____ seem like a person who would put his own life above all else?

    Yes_____   No_____

*30. Does _____ have any "creative" hobbies or a "creative" vocation, e.g., painting, sculpture, ballet, writing short stories, etc.?

    _____Yes   *If Yes, which?_____.
    _____No

31. Is _____ particularly concerned about her/his physical safety?

    Yes_____   No_____

*32. Is _____ the type of person to have seriously contemplated or attempted suicide?

    Yes_____   No_____

*33. What religion would you say _____ was brought up in?

    _____

34. What is _____'s education level --degree or year in college?

    _____

*35. What is _____'s income or his/her parents' income if a student?

    _____Less than $3,000 a year (about $60 a week or less)
    _____Between $3,000 and $5,999 a year (from $60 to $119 a week)
    _____Between $6,000 and $7,499 a year (from $120 to $149 a week)
    _____Between $7,500 and $8,999 a year (from $150 to $179 a week)
    _____Between $9,000 and $10,499 a year (from $180 to $209 a week)
    _____Between $10,500 and $11,999 a year (from $210 to $239 a week)
    _____Between $12,000 and $13,499 a year (from $240 to $269 a week)
    _____Between $13,500 and $14,999 a year (from $270 to $299 a week)
    _____Between $15,000 and $18,000 a year (from $300 to $359 a week)
    _____Over $18,000 a year (about $360 a week or more)

*36. What size home town do you think _____ comes from?

    _____In a rural or farming community
    _____In a small city or town of fewer than 50,000 people that is not a suburb of a larger place
    _____In a medium-sized city (50,000-100,000 people)
    _____In a suburb of a medium-sized city
    _____In a large city (100,000-500,000 people)
    _____In a suburb of a large city
    _____In a very large city (over 500,000 people)
    _____In a suburb of a very large city

* 3~. What kind of grades did/does _____ get in school/college?

_____ Mostly A's
_____ Mostly A's and B's
_____ Mostly B's and C's
_____ Mostly C's and D's
_____ Mostly D's and below

* 38. How much money would you say _____ has in the bank?

_____ None
_____ less than $500
_____ between $500 and $2500
_____ between $2500 and $10,000
_____ more than $10,000

39 . What is _____'s marital status?

_____ Married
_____ Divorced
_____ Widow/widower
_____ Separated
_____ Single (never married)

You were probably able to answer some of the questions about _____
from direct discussion you had in the group. Other questions were
answered on the basis of inferences you made about how _____ might
have behaved in different situations. We would like to know the basis
for those inferences. Write a brief statement which describes what
aspects of _____'s character, mannerisms, general experience, etc.,
led you to make the judgements you did. (If it is easier, use specific
questions and indicate why you answered as you did.)

-continue on next sheet if necessary-

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APPENDIX I--ADJECTIVE CHECKLISTS

Check each of the following adjectives you think applies to yourself.

1.	Absent-minded	72.	Leisurely
2.	Active	73.	Logical
3.	Adaptable	74.	Loud
4.	Adventurous	75.	Loyal
5.	Affected	76.	Mature
6.	Aggressive	77.	Meek
7.	Alert	78.	Mischievous
8.	Aloof	79.	Moderate
9.	Ambitious	80.	Moody
10.	Anxious	81.	Noisy
11.	Apathetic	82.	Opportunistic
12.	Appreciative	83.	Optimistic
13.	Assertive	84.	Organized
14.	Attractive	85.	Painstaking
15.	Bitter	86.	Persevering
16.	Boastful	87.	Planful
17.	Capable	88.	Poised
18.	Careless	89.	Polished
19.	Cheerful	90.	Practical
20.	Clear-thinking	91.	Precise
21.	Commonplace	92.	Progressive
22.	Complaining	93.	Quarrelsome
23.	Conceited	94.	Quitting
24.	Confident	95.	Rational
25.	Conscientious	96.	Rattle Brained
26.	Conservative	97.	Reasonable
27.	Considerate	98.	Rebellious
28.	Conventional	99.	Reckless
29.	Cooperative	100.	Reliable
30.	Courageous	101.	Resentful
31.	Cruel	102.	Reserved
32.	Cynical	103.	Resourceful
33.	Daring	104.	Resonsible
34.	Defensive	105.	Rude
35.	Deliberate	106.	Self-centered
36.	Demanding	107.	Self-controlled
37.	Dependent	108.	Self-denying
38.	Determined	109.	Serious
39.	Disorderly	110.	Sharp-witted
40.	Dominant	111.	Shiftless
41.	Easygoing	112.	Shrewd
42.	Efficient	113.	Silent
43.	Energetic	114.	Slipshod
44.	Enterprising	115.	Sociable
45.	Enthusiastic	116.	Soft-hearted
46.	Excitable	117.	Spend thrift
47.	Fair-minded	118.	Spontaneous
48.	Fault-finding	119.	Spunky
50.	Forgetful	120.	Steady
51.	Forgiving	121.	Strong
52.	Frivolous	122.	Submissive
53.	Fussy	123.	Sympathetic
54.	Gentle	124.	Tactless
55.	Good natured	125.	Thorough
56.	Hasty	126.	Thrifty
57.	Healthy	127.	Timid
58.	High strung	128.	Tolerant
59.	Hostile	129.	Trusting
60.	Humorous	130.	Unaffected
61.	Hurried	131.	Unambitious
62.	Independent	132.	Unconventional
63.	Indifferent	133.	Undependable
64.	Industrious	134.	Unemotional
65.	Initiative	135.	Unkind
66.	Intelligent	136.	Unstable
67.	Interests narrow	137.	Vindictive
68.	Interests wide	138.	Versatile
69.	Irresponsible	139.	Warm
70.	Irritable	140.	Weak
71.	Lazy	141.	Wholesome
		142.	Wise

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How is _____ filling out the items on this scale ... how do you think he/she is answering these items about himself/herself or how does he/she see himself/herself?

1.	Absent-minded	72.	Leisurely
2.	Active	73.	Logical
3.	Adaptable	74.	Loud
4.	Adventurous	75.	Loyal
5.	Affected	76.	Mature
6.	Aggressive	77.	Meek
7.	Alert	78.	Mischievous
8.	Aloof	79.	Moderate
9.	Ambitious	80.	Moody
10.	Anxious	81.	Noisy
11.	Apathetic	82.	Opportunistic
12.	Appreciative	83.	Optimistic
13.	Assertive	84.	Organized
14.	Attractive	85.	Painstaking
15.	Bitter	86.	Persevering
16.	Boastful	87.	Planful
17.	Capable	88.	Poised
18.	Careless	89.	Polished
19.	Cheerful	90.	Practical
20.	Clear-thinking	91.	Precise
21.	Commonplace	92.	Progressive
22.	Complaining	93.	Quarrelsome
23.	Conceited	94.	Quitting
24.	Confident	95.	Rational
25.	Conscientious	96.	Rattle Brained
26.	Conservative	97.	Reasonable
27.	Considerate	98.	Rebellious
28.	Conventional	99.	Reckless
29.	Cooperative	100.	Reliable
30.	Courageous	101.	Resentful
31.	Cruel	102.	Reserved
32.	Cynical	103.	Resourceful
33.	Daring	104.	Responsible
34.	Defensive	105.	Rude
35.	Deliberate	106.	Self-centered
36.	Demanding	107.	Self-controlled
37.	Dependent	108.	Self-denying
38.	Determined	109.	Serious
39.	Disorderly	110.	Sharp-witted
40.	Dominant	111.	Shiftless
41.	Easygoing	112.	Shrewd
42.	Efficient	113.	Silent
43.	Energetic	114.	Slipshod
44.	Enterprising	115.	Sociable
45.	Enthusiastic	116.	Soft-hearted
46.	Excitable	117.	Spend thrift
47.	Fair-minded	118.	Spontaneous
48.	Fault-finding	119.	Spunky
50.	Forgetful	120.	Steady
51.	Forgiving	121.	Strong
52.	Frivolous	122.	Submissive
53.	Fussy	123.	Sympathetic
54.	Gentle	124.	Tactless
55.	Good natured	125.	Thorough
56.	Hasty	126.	Thrifty
57.	Healthy	127.	Timid
58.	High strung	128.	Tolerant
59.	Hostile	129.	Trusting
60.	Humorous	130.	Unaffected
61.	Hurried	131.	Unambitious
62.	Independent	132.	Unconventional
63.	Indifferent	133.	Undependable
64.	Industrious	134.	Unemotional
65.	Initiative	135.	Unkind
66.	Intelligent	136.	Unstable
67.	Interests narrow	137.	Vindictive
68.	Interests wide	138.	Versatile
69.	Irresponsible	139.	Warm
70.	Irritable	140.	Weak
71.	Lazy	141.	Wholesome
		142.	Wise

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APPENDIX J--DESCRIPTION OF ADJECTIVE CHECKLIST (ACL)
CONSTRUCTION PROCESS

The length of the ACL in its original form necessitated modification (shortening) for use in this research.[*] The following steps were taken to systematically reduce the number of items in the test without violating the integrity of each of the scales retained:

(1) Of the 23 possible scales involved in the complete ACL (240 items), only eight were selected for inclusion in this survey. They are: 1. Self-Confidence; 2. Self-Control; 3. Personal Adjustment; 4. Achievement (need); 5. Endurance; 6. Affiliation (need); 7. Aggression; 8. Change. These were selected because they seemed more relevant to the objectives of this study[+] and because the scales were similar to some of the dimensions of the 16PF, the major personality measure used among predictor variables.

(2) Over 180 items still remained after this first step, requiring a further reduction. A potential interest in the positive-negative dimension of the ACL prompted the elimination of all items with contradictory interpretations, defined as any case in which an item was considered a positive factor on one scale and a negative on another. This procedure reduced the total list to 142 items, all of which can be uniformly interpreted as either positive or negative.

We realize that this procedure, particularly step 2, could have been based on better empirical criteria; however, time and funds did not permit a methodologically more sophisticated approach. Furthermore, our purpose

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[*] Gough, Harrison G. and Heilbrun, Alfred B., ACL; The Adjective Checklist Manual, Palo Alto, Consulting Psychologists Press, 1965, 1971.

[+] They were chosen because they represented some of the characteristics potentially important under the "real world" conditions presented by the Technical Monitor as the focus of the project.

was to compare actual responses to inferred responses, and the validity of the scales, per se, was less important. Subjects checked items on an alphabetical list, not on predetermined scales, which were used only as a device for grouping responses. Individual items would not have less validity as representative of particular scales because other original scale items were absent.

APPENDIX K:

Frequency Distributions

for All Variables

Distribution of Continuous Variables

VARIABLE	N	MEAN	STANDARD DEVIATION
Observation	188	8.8954	1.6913
Inference	188	27.7664	2.9351
Bob/Mary Jane	188	9.9656	2.4750
Film	188	9.0964	2.6450
Self-Confidence	188	5.8972	2.9300
Self-Control	188	4.0142	1.8739
Personal Adjustment	188	4.8564	2.4703
Achievement	188	6.7500	3.4394
Endurance	188	5.4858	2.6554
Affiliation	188	5.5621	2.7133
Aggression	186	4.6649	2.2871
Change	188	2.8777	1.5657
Differentiation	188	25.7393	10.1498
Integration	186	1.7052	0.6675
Cognitive Complexity	186	44.1452	24.8606
Reserved-Outgoing	188	5.4362	1.9406
Dull-Bright	188	5.6596	1.9570
Affected by Feelings-Emotionally Stable	188	5.3245	1.9611
Humble-Assertive	188	6.1330	1.9093
Sober/Happy-Go-Lucky	188	5.6330	1.7818
Expedient-Conscientious	188	5.0479	1.9411
Shy-Venturesome	188	6.0372	2.0143
Tough Minded-Tender Minded	188	5.6277	1.9096
Trusting-Suspicious	188	5.8830	1.9939
Practical-Imaginative	188	6.0266	1.9743
Forthright-Astute	188	5.4521	1.8508
Self-Assured/Apprehensive	188	5.5106	1.8514
Conservative-Experimenting	188	6.4362	1.9707
Group Dependent/Self-Sufficient	188	5.9681	1.8812
Undisciplined-Controlled	188	5.4787	1.9797
Relaxed-Tense	188	5.5745	2.0265
Extraversion-Introversion	187	5.7096	1.5749
Low Anxiety-High Anxiety	187	5.4893	1.7183
Sensitivity/Tough-Poise	187	5.8230	2.0818
Dependence-Independence	186	6.4086	1.6592
Sex	188	0.0638	1.0006
Grades	181	2.4696	0.8202
Marital Status	188	-0.6702	0.7442
Income	168	6.8095	2.7094
Protestant	154	0.4026	0.9184
Catholic	80	-0.1500	0.9949
Insurance Salesperson	188	-0.7021	0.7140
Internalizer/Externalizer	107	1.5981	0.4926
Regulated Flexible	107	1.4486	0.4997
Role Adaptive/Role Uniform	107	1.6916	0.4640
Normal	107	13.6449	7.6581

Table K-2: Distribution of Sample Elements
by Grades

Grades	Absolute Frequency	Relative Frequency (%)
Mostly A's	22	11.7
Mostly A's and B's	67	35.6
Mostly B's and C's	78	41.5
Mostly C's and D's	13	6.9
Mostly D's and below	1	0.5
No response	7	3.7
	188	99.9%

Table K-3: Distribution of Sample Elements
by Marital Status

Marital Status	Absolute Frequency	Relative Frequency
Married	31	16.5
Divorced	4	2.1
Widow/Widower	1	0.5
Separated	1	0.5
Single (Never married)	128	68.1
No response	23	12.2
	188	99.9%

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Table K-4: Distribution of Sample Elements
by Religious Affiliation

Religions Affiliation	Absolute Frequency	Relative Frequency (%)
Protestant	108	57.4
Catholic	34	18.1
Other Christian	15	8.0
Jewish	14	7.4
Other	9	4.8
None	2	1.1
No Response	6	3.2
	188	100

Table K-5: Distribution of Sample Elements
by Income

Income (In Thousands of Dollars)	Absolute Frequency	Relative Frequency (%)
0	20	10.6
< 3	11	5.9
3 - 6	13	6.9
6 - 7.5	4	2.1
7.5 - 9	13	6.9
9 - 10.5	4	2.1
10.5 - 12	7	3.7
12 - 13.5	16	8.5
13.5 - 18	31	16.5
> 18	69	36.7
	188	99.9

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APPENDIX L--FILM SELECTION AND QUESTIONNAIRE DEVELOPMENT

Our objective was to obtain a stimulus film with a "natural" setting for the observation of and making inferences about one or more persons. The film had to provide at least ten minutes of observational contact with each stimulus person in a situation which could offer a broad range of behavioral and emotional conditions. Finally, we needed to be able to determine if the inferences made by our subjects about film participants were correct or incorrect. These requirements eliminated films employing professional actors and those directed with a particular objective in mind. The remaining films were of natural group interactions with no specific goal, in which people were allowed to chooose their own response patterns.

We selected as an observation and inference stimulus a condensation of six 45-minute to 1-hour films of a small "self-actualization" group.* It is 24 minutes long and focuses on two group participants, Bob and Mary Jane, each of whom appears for approximately half of the time, including several occasions on which they interact directly. The only other characters having significant roles in the film are the analyst and his assistant.

The original films were made for a television program, but are completely unrehearsed and follow the natural lines of discussion. On the basis of behaviors exhibited by the participants, it would appear that the television cameras had little effect on what was said or done. All participants knew about the filming and had agreed to participate in the sessions. In any case, we do not feel that any inhibition caused by being "on television" would represent a situation markedly different from real-life situations in which observers and inferrers might operate.

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* We are indebted to Dr. Everett Shostrom of the Institute of Therapeutic Psychology for permission to use and modify these films for the purposes of our experiment.

The six original films were edited to select the maximum number of sequences in which Bob and Mary Jane were the major participants. An attempt was also made to include the full range of emotional behavior expressed by Bob and Mary Jane.

Questionnaire Development

After the film was edited and put onto a single reel, questionnaires on observations of the film and inferences about the major characters were developed. The observation items were constructed on the basis of repeated viewings of the film by the researcher and two assistants. Since we did not know what kind of observations would be most useful for making inferences about other aspects of the participants' lives, we restricted ourselves to the kind of questions to be used in the group discussion session questionnaires. These included questions about physical appearance, setting, and certain activities carried out by Bob and Mary Jane. (See Appendix D.) We did not have time to pretest the film questionraire (the films arrived too late to allow development and scheduling of pretests) and therefore used only our own judgment as to what were useful items. A further development of this questionnaire is suggested if it is to be used in subsequent studies of this type.

The inference questionnaires (one for Bob and one for Mary Jane) were also modeled after those used for the group sessions. Included were items about the past behavior of Bob and Mary Jane which closely paralleled those asked of the subjects in the behavior questionnaire. Our intention was to create a situation in which differences in the responses to the two questionnaires could be attributed to the differences in the stimulus (Bob and Mary Jane versus group members) rather than in the kinds of information elicited.

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Since it was not possible to contact Bob and Mary Jane personally, criteria information for determining the correctness of subjects' inferences was provided by Dr. Everett Shostrom, who had both as patients for some time prior to the creation of the films. This was the most reliable procedure available for obtaining the needed information on the films we used or any we were able to locate.

APPENDIX H:

Correlation Matrix for All
Continuous Variables

The correlation matrix for all continuous variables appears on the following page. It should be noted that $p > .05$ when $r = .12$ or greater for all variables but PAS results and Normal Score. Further, $p > .05$ when $r = .17$ or greater for all PAS variables. A listing of the variables appears below:

OBS	Observation
INF	Inference
BMJ	Bob/Mary Jane
F...	Film
ACL01	Self-Confidence
ACL02	Self-Control
ACL03	Personal Adjustment
ACL04	Achievement
ACL05	Endurance
ACL06	Affiliation
ACL07	Aggression
ACL08	Change
CCS1	Differentiation
CCS2	Integration
CCS3	Cognitive Complexity
PF01	Reserved-Outgoing
PF02	Dull-Bright
PF03	Affected by Feelings - Stable
PF04	Humble-Assertive
PF05	Sober-Happy-Go-Lucky
PF06	Expedient-Conscientious
PF07	Shy-Venturesome
PF08	Tough-Tender Minded
PF09	Trusting-Suspicious
PF10	Practical-Imaginative
PF11	Forthright-Astute
PF12	Self-Assured/Apprehensive
PF13	Conservative-Experimenting
PF14	Group Dependent/Self-Sufficient
PF15	Undisciplined-Controlled
PF16	Relaxed-Tense
PF17	Extraversion-Introversion
PF18	Low Anxiety-High Anxiety
PF19	Sensitivity/Tough-Poise
PF20	Dependence-Independence
SEX	Sex
GRADE	Grades
MARST	Marital Status
INCOM	Income
REL1	Protestant
REL2	Catholic
INS	Insurance Salesperson
I-E	Internalizer/Externalizer
R-F	Regulated/Flexible
A-U	Role Adaptive/Role Uniform
NORM	Normal Score

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	OBS	INF	SMJ	FILM	ACL01	ACL02	ACL03	ACL04	ACL05	ACL06	ACL07	ACL08	CCS1	CCS2	CCS3	PF01	PF02	PF03	PF04	PF05	PF06	PF07	PF08	PF09	PF10	PF11	PF12	PF13	PF14
INF	.15																												
SMJ	.12	.06																											
FILM	.03	.16	.05																										
ACL01	-.07	-.20	.06	-.11																									
ACL02	.01	-.15	.02	-.16	.60																								
ACL03	-.02	-.14	.07	-.06	.63	.52																							
ACL04	-.03	-.13	.06	-.14	.80	.65	.55																						
ACL05	.04	-.14	.00	-.13	.64	.74	.65	.76																					
ACL06	-.04	-.20	.02	-.10	.66	.58	.70	.57	.52																				
ACL07	.10	-.15	.01	-.17	.40	.55	.49	.47	.55	.39																			
ACL08	.03	-.15	-.04	-.06	.47	.35	.45	.43	.34	.52	.30																		
CCS1	.01	.07	-.02	-.13	-.05	.02	.00	-.04	.02	-.02	.06	.04																	
CCS2	-.03	-.11	-.13	.05	.06	.06	.05	.00	.07	.06	.07	.05	.02																
CCS3	-.02	-.01	-.11	-.05	-.02	.03	.02	-.06	.03	.02	.11	.05	.70	.69															
PF01	.11	.00	.08	.06	-.02	-.05	-.03	.06	-.02	.02	-.07	.11	.08	-.19	-.08														
PF02	-.03	.08	-.01	.07	.01	.04	.08	.02	.03	-.02	.04	-.09	.10	.04	.10	-.05													
PF03	-.13	.03	.10	-.05	.02	-.04	.07	.05	.02	.03	-.13	.06	.00	.04	.02	.10	.00												
PF04	.06	-.01	.12	.00	-.10	-.04	.00	-.04	-.04	-.01	.12	-.07	.05	-.12	-.02	-.06	-.10	-.08											
PF05	.04	-.06	.07	.05	.02	.08	.05	.05	.09	.07	.08	-.01	.10	.01	.09	.06	.02	.11	.17										
PF06	.02	.06	.06	.01	-.02	-.12	.05	-.01	-.06	-.05	-.17	.09	.05	.00	.00	.13	.05	.13	-.24	.04									
PF07	.13	.03	.07	.13	-.07	-.01	-.04	.03	.03	-.14	-.09	.04	.08	-.03	.04	.32	-.13	.23	.17	.24	.04								
PF08	.03	.14	.02	.06	-.05	-.12	-.03	-.02	-.07	-.04	-.06	.07	.05	-.07	-.01	.24	.02	.04	-.11	-.04	.05	.06							
PF09	.04	.03	-.05	-.01	-.19	-.15	-.15	-.14	-.12	-.13	-.05	-.04	.03	.03	.04	-.12	.04	-.25	.29	-.06	-.13	-.04	-.12						
PF10	.02	.05	-.06	-.03	.07	.04	.03	.15	.16	-.04	.00	.04	.07	.01	.04	.11	.01	-.08	.02	-.15	-.05	.07	.25	.05					
PF11	-.05	-.03	.00	-.00	.06	.05	.00	.05	.01	.03	-.01	.08	.07	-.06	.00	.03	.08	-.23	-.02	-.14	.19	-.24	.01	.10	.00				
PF12	.01	-.03	-.05	-.01	.00	.09	-.05	-.02	.03	-.02	.05	-.06	.08	.00	.04	-.08	.03	-.48	-.01	-.11	-.03	-.23	-.11	.18	-.03	.28			
PF13	.11	.01	-.11	-.04	.03	.04	.01	.02	.03	.00	-.03	-.07	-.02	.13	.10	-.01	.03	-.11	.08	-.03	-.12	-.05	.27	.01	.31	-.06	.04		
PF14	-.03	.04	-.20	.02	-.04	.00	.03	.09	-.05	-.05	.06	.12	.01	.10	.09	-.51	.20	-.25	.15	-.32	-.17	-.27	.09	.07	.15	.10	.19	.22	
	.15	-.06	.01	.09	.03	.02	-.04	.06	.00	-.06	-.01	-.12	.05	.01	.03	.00	.25	.07	.27	-.34	.00	.32	.21	.13	-.25	.07	.02	-.12	-.11
	-.02	-.10	-.10	-.09	-.05	.02	-.12	-.04	-.05	-.01	.02	.00	.11	-.06	.05	-.12	.05	-.39	.13	-.03	.16	-.30	-.11	.32	-.07	.29	.49	.04	.21
PF17	.05	-.02	.16	.08	-.09	-.03	-.01	.00	.00	-.02	-.02	.02	.08	-.10	-.01	.40	-.15	.25	.36	.68	.07	.62	-.11	.04	-.15	-.25	-.27	-.14	-.61
	.04	-.12	-.09	-.05	-.06	.04	.10	-.06	-.03	-.01	.06	-.03	.05	-.04	.03	-.15	.05	-.67	.11	-.12	-.06	-.40	-.10	.42	-.13	.36	.75	.04	.26
	-.12	-.13	.04	-.03	-.06	.04	.01	-.06	.02	-.03	.12	-.15	-.01	.19	.13	-.52	-.01	.04	.40	.32	-.29	.04	-.53	.25	-.24	-.21	-.02	-.16	.00
PF20	-.10	.14	-.03	.02	-.08	-.07	.03	-.02	-.02	-.10	.04	-.09	.02	-.03	.03	.05	.07	-.05	.62	-.04	-.33	.20	.24	.30	.57	.19	.22	.51	.38
	.12	-.06	-.22	.07	.07	-.17	.09	-.07	-.16	-.01	-.25	.09	-.15	-.03	-.14	.05	.03	.08	-.22	.00	.07	-.01	-.03	-.12	-.10	.05	.00	-.12	-.16
	.05	.05	.05	.07	.01	.03	-.06	-.02	-.05	.02	-.02	.16	-.06	.01	-.03	-.05	-.08	-.15	.03	.07	-.08	.05	-.08	.09	-.18	.09	-.02	.00	-.11
	-.07	.03	-.05	-.05	-.05	-.14	.17	-.05	.11	-.14	-.21	-.05	-.04	-.11	-.11	.22	-.09	.09	.04	.00	.09	.17	.10	.01	.05	.05	-.06	.00	-.05
	.07	.01	.11	.03	.00	-.15	-.06	-.09	-.09	-.06	-.03	.06	.05	-.11	-.02	.07	-.04	.05	.02	.07	.02	.23	.03	.09	-.02	-.14	-.17	-.11	-.20
	.20	.02	.00	-.06	.02	.07	.09	-.02	.07	.01	.17	.01	.00	.15	.11	-.11	.10	-.11	.16	.10	-.16	-.12	-.04	.14	-.16	-.04	.09	.06	.09
	.21	.23	.02	-.07	-.08	-.16	-.11	-.12	-.11	-.13	.06	.07	-.05	.18	.10	.15	-.01	.01	-.01	.14	-.05	.04	.13	.13	-.22	-.05	-.21	.00	-.17
	-.03	.11	.01	.08	-.09	-.17	-.15	-.07	-.23	-.14	-.26	.06	.10	-.20	-.09	-.43	.01	.20	-.02	-.01	.14	.25	.26	-.06	.09	.05	-.27	-.04	-.11
	.13	.03	.09	.00	-.12	-.06	-.11	-.05	-.09	-.06	-.06	-.09	-.06	-.09	-.11	.14	-.11	.01	-.05	-.05	.04	.06	.04	-.16	-.17	.05	-.06	-.05	-.15
	.07	.05	-.03	-.06	.02	.09	.06	.17	.07	.03	-.01	.13	.12	-.08	.03	.15	.02	.01	-.03	.05	.06	.16	.21	.05	.15	.01	-.13	-.06	-.03
	-.10	-.14	-.01	-.04	-.09	.00	-.02	-.05	-.11	.03	-.14	.01	.02	.00	.00	.09	.09	-.01	-.02	-.15	.01	.05	.15	.00	.21	.12	.04	.07	.01
	-.13	.15	-.11	-.13	.03	-.03	.10	-.02	-.04	.00	.03	.05	.25	.01	.19	-.19	.13	-.13	.04	-.04	-.03	-.02	.10	-.05	.06	-.03	.00	.10	.22

** Correlation could not be computed

PF07 PF08 PF09 PF10 PF11 PF12 PF13 PF14 PF15 PF16 PF17   PF18 PF19 PF20   SEX GRADE MARST INCOM RELI PEL2 INS   I-L   P-F   A-U

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 .06
-.06  -.12
 .07   .25   .05
-.24   .01   .10   .00
-.33  -.11   .18  -.03   .28
-.05   .27   .01   .31  -.06   .24
-.27   .09   07   .15   .10   .19   .32
 21    .13  -.25   07  -.02  -.12  -.11  -.18
-.30  -.11   .32  -.07   .29   .49   .04   .21  -.32
 .62  -.11   .04  -.15  -.25  -.27  -.14  -.61   .07  -.11
-.40  -.10   .42  -.13   .36   .75   .04   .26  -.40   .35  -.24
 .04  -.53   .25  -.24  -.21  -.02  -.16   .00  -.50   .16   .29   .10
 3    .24   .30   .57  -.19  -.21   51   .38  -.14  -.08   .03  -.14   .08
-.01  -.03  -.12  -.10   .03   .00  -.12  -.16   .18  -.07   .04  -.10  -.13  -.26
 .05  -.08   .09  -.18   .09  -.02   .00  -.11  -.02   .12   .07   .09   .09  -.07   .18
 .17   .10   .01   .05   03  -.09   .00  -.05   .24  -.06   .15  -.12  -.19   .08   .16  -.01
 .23   .03   .09  -.02  -.14  -.17  -.11  -.20   .04  -.08   .21  -.14   .02   .01   .10   .04   .10
-.12  -.04   .14  -.16  -.04   .09   06   .09  -.16   .06   .01   .15   .15   .16  -.18  -.05  -.04   .12
 .04   .13   .13  -.29  -.05  -.21   00  -.17   .15  -.11   .15  -.11  -.09  -.0.  -.04   02   .20   .34  **
 .25   .24  -.06   .09   .04  -.27  -.04  -.11   .33  -.17   .18  -.28  -.38   .09   .27   03   .56   .16  -.22   .12
 .06   .04  -.16  -.17   .0.  -.05  -.05  -.15  -.02  -.16   .06  -.13  -.13  -.14  -.17   .08   .11  -.06  -.08  -.04   .09
 .16   .21   .05   .15   .01  -.11  -.06  -.03   .21  -.12   .07  -.09  -.10   .11  -.15  -.09   .18  -.11  -.20  -.22   .25   .05
 .05   .15   .00   21    .12   .04   .07   .01   .02  -.23  -.08  -.09  -.20   .10   .07  -.03  -.02  -07  -.09  -.17   .11   .03   .15
-.02   .10  -.05   .06  -03    .00   .12   .22  -.10   .12  -.16   .09  -.06   .16  -.03  -04  -.01  -.16  -..4  -.07   .00  -.13   .03   .26
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statistic could not be computed

APPENDIX N

Covariance Tables for PAS

and

Observation/Inference

Key for Variable Symbols

CCS3   = Cognitive Complexity Level

Normal = Normal Level (from WAIS)

CSEX   = Sex

AU1   = Role Adaptive - Role Uniform Dimension

RF1   = Regulated - - Flexible Dimension

PL   = Primitive Level

Table N-1: Distribution of Sample Elements by
Primitive Levels of the WAIS
Personality Assessment System (PAS)

Primitive Level	Absolute Frequency	Relative Frequency
ERA	10	.09%
ERU	15	.14
EFA	4	.04
EFU	14	.13
IRA	12	.11
IRU	21	.20
IFA	7	.07
IFU	23	.22
	106	100%

Table N-2: Distribution of Sample Elements
            by Basic Level of the WAIS
            Personality Assessment System (PAS)

Basic Level	Absolute Frequency	Relative Frequency
Ic or Eu and Ru or Fc and Au or Uc	2	.02
Ic or Eu and Ru or Fc and Ac or Uu	1	.01
Ic or Eu and Rc or Fu and Au or Uc	22	.21
Ic or Eu and Rc or Fu and Ac or Uu	10	.09
Iu or Ec and Ru or Fc and Au or Uc	1	.01
Iu or Ec and Ru or Fc and Ac or Uu	2	.02
Iu or Ec and Rc or Fu and Au or Uc	36	.34
Iu or Ec and Rc or Fu and Ac or Uu	32	.30
	106	100%

Table N-3:   Distribution of Sample Elements
within each Dimension

	N	Absolute Frequency	Relative Frequency
Internalized		43	.41
Externalized		63	.59
		106	100%
Regulated		58	.55
Flexible		48	.45
		106	100%
Role Adaptive		33	.31
Role Uniform		73	.69
		106	100%

TABLE N-4:

Analysis of Covariance for PAS

Observation by Internalizer-Externalizer Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	5.496	2	2.748	1.025	0.364
NORMAL	5.423	1	5.423	2.023	0.154
CCS3	0.035	1	0.035	0.013	0.999
MAIN EFFECTS	66.391	2	33.195	12.381	0.001
CSFX	59.207	1	59.207	22.083	0.001
IE1	1.157	1	1.157	0.431	0.999
2-WAY INTERACTIONS	0.841	1	0.841	0.314	0.999
CSEX IE1	0.841	1	0.841	0.314	0.999
EXPLAINED	72.727	5	14.545	5.425	0.001
RESIDUAL	268.112	100	2.681		
TOTAL	340.840	105	3.246		

COVARIATE	BETA
NORMAL	-0.030
CCS3	0.001

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TABLE N-5:

Analysis of Covariance for PAS

Observation by RF Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	5.496	2	2.748	1.032	0.361
NORMAL	5.425	1	5.423	2.037	0.153
CCS3	0.035	1	0.035	0.037	0.999
MAIN EFFECTS	65.293	2	32.647	12.265	0.001
CSEX	63.523	1	63.523	23.864	0.001
RF1	0.059	1	0.059	0.022	0.999
2-WAY INTERACTIONS	3.862	1	3.862	1.451	0.229
CSEX RF1	3.862	1	3.862	1.451	0.229
EXPLAINED	74.651	5	14.930	5.609	0.001
RESIDUAL	266.189	100	2.662		
TOTAL	340.840	105	3.246		

COVARIATE	BETA
NORMAL	-0.030
CCS3	0.001

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TABLE N-6:

Analysis of Covariance for PAS

Observation by AU Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	5.496	2	2.748	1.022	0.365
NORMAL	5.423	1	5.423	2.017	0.155
CCS3	0.035	1	0.035	0.013	0.999
MAIN EFFECTS	66.553	2	33.277	12.380	0.001
CSEX	63.752	1	63.752	23.718	0.001
AU1	1.519	1	1.319	0.491	0.999
2-WAY INTERACTIONS	0.000	1	0.000	0.000	0.000
CSEX AU1	0.000	1	0.000	0.000	0.000
EXPLAINED	72.049	5	14.410	5.361	0.001
RESIDUAL	268.791	100	2.688		
TOTAL	340.840	105	3.246		

COVARIATE	BETA
NORMAL	-0.030
CCS3	0.001

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TABLE N-7:

Analysis of Covariance for PAS

Observation by PL Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	5.496	2	2.748	1.003	0.372
NORMAL	5.423	1	5.423	1.980	0.159
CCS3	0.037	1	0.035	0.013	0.999
MAIN EFFECTS	78.911	8	9.864	3.602	0.001
CSEX	60.996	1	60.996	22.274	0.001
PL	13.677	7	1.954	0.713	0.999
2-WAY INTERACTIONS	15.447	7	2.207	0.806	0.999
CSEX PL	15.447	7	2.207	0.806	0.999
EXPLAINED	99.854	17	5.874	2.145	0.011
RESIDUAL	240.985	88	2.738		
TOTAL	340.840	105	3.246		

COVARIATE	BETA
NORMAL	-0.030
CCS3	0.001

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TABLE N-3:

Analysis of Covariance for PAS

Inference by Internalizer-Externalizer Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	32.449	2	16.224	2.037	0.134
NORMAL	31.981	1	31.981	4.014	0.045
CCS3	3.121	1	3.121	0.392	0.999
MAIN EFFECTS	56.021	2	28.010	3.516	0.033
CSEX	54.213	1	54.213	6.805	0.010
IE1	0.028	1	0.028	0.003	0.999
2-WAY INTERACTIONS	7.355	1	7.355	0.923	0.999
CSEX IF1	7.355	1	7.355	0.923	0.999
EXPLAINED	95.824	5	19.165	2.406	0.042
RESIDUAL	796.634	100	7.966		
TOTAL	892.458	105	8.500		

	BETA
COVARIATE	
NORMAL	0.073
CCS3	-0.007

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TABLE N-9:

Analysis of Covariance for PAS

Inference by AU Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	32.449	2	16.224	2.085	0.127
NORMAL	31.981	1	31.981	4.110	0.043
CCS3	3.121	1	3.121	0.401	0.999
MAIN EFFECTS	73.157	2	36.579	4.701	0.011
CSEX	51.783	1	51.783	6.654	0.011
AU1	17.164	1	17.164	2.206	0.137
2-WAY INTERACTIONS	8.681	1	8.681	1.116	0.294
CSEX AU1	8.681	1	8.681	1.116	0.294
EXPLAINED	114.286	5	22.857	2.937	0.016
RESIDUAL	778.172	100	7.782		
TOTAL	892.453	105	8.500		

COVARIATE	BETA
NORMAL	0.073
CCS3	-0.007

TABLE N-10:

Analysis of Covariance for PAS

Film Observation by AU Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	28.741	2	14.370	2.145	0.120
NORMAL	6.340	1	6.340	0.946	0.999
CCS3	17.268	1	17.268	2.577	0.107
MAIN EFFECTS	7.760	2	3.880	0.579	0.999
CSEX	7.521	1	7.521	1.123	0.292
AU1	0.445	1	0.445	0.066	0.999
2-Way Interactions	7.597	1	7.597	1.134	0.290
CSEX AU1	7.597	1	7.597	1.134	0.290
EXPLAINED	44.098	5	8.820	1.315	0.290
RESIDUAL	669.949	100	6.699		
TOTAL	714.047	105	6.800		

COVARIATE	BETA
NORMAL	-0.033
CCS3	-0.016

TABLE N-11:

Analysis of Covariance for PAS

Bob and Mary Jane Inference by AU Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	14.241	2	7.120	1.109	0.335
NORMAL	5.197	1	5.197	0.809	0.999
CCS3	6.293	1	6.293	0.980	0.999
MAIN EFFECTS	17.342	2	8.671	1.350	0.263
CSEX	17.335	1	17.335	2.700	0.099
AU1	0.126	1	0.126	0.020	0.999
2-WAY INTERACTIONS	3.994	1	3.994	0.622	0.999
CSEX AU1	3.994	1	3.994	0.622	0.999
EXPLAINED	35.577	5	7.115	1.108	0.361
RESIDUAL	642.107	100	6.421		
TOTAL	677.684	105	6.454		

COVARIATE	BETA
NORMAL	-0.029
CCS3	-0.010

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TABLE N-12:

Analysis of Covariance for PAS

Bob and Mary Jane Inference by RF Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	14.241	2	7.120	1.118	0.332
NORMAL	5.197	1	5.197	0.816	0.999
CCS3	6.293	1	6.293	0.988	0.999
MAIN EFFECTS	19.252	2	9.616	1.510	0.224
CSEX	18.514	1	18.514	2.906	0.087
RF1	2.017	1	2.017	0.317	0.999
2-WAY INTERACTIONS	7.188	1	7.188	1.128	0.291
CSEX RF1	7.188	1	7.188	1.128	0.291
EXPLAINED	40.662	5	8.132	1.277	0.279
RESIDUAL	637.023	100	6.370		
TOTAL	677.684	105	6.454		

COVARIATE	BETA
Normal	-0.029
CCS3	-0.010

TABLE N-13:

Analysis of Covariance for PAS

Bob and Mary Jane Inference by PL Dimension and Sex

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	14.241	2	7.120	1.146	0.323
NORMAL	5.197	1	5.197	0.836	0.999
CCS3	6.293	1	6.293	1.013	0.318
MAIN EFFECTS	89.492	8	11.187	1.800	0.087
CSEX	10.000	1	10.000	1.610	0.205
PL	72.277	7	10.325	1.662	0.128
2-WAY INTERACTIONS	27.184	7	3.883	0.625	0.999
CSEX PL	27.184	7	3.883	0.625	0.999
EXPLAINED	130.918	17	7.701	1.239	0.252
RESIDUAL	546.767	88	6.213		
TOTAL	677.684	105	6.454		

COVARIATE	BETA
NORMAL	-0.029
CCS3	-0.010

TABLE N-14:

Analysis of Covariance for PAS

Film Observation by PL and Sex

SOURCE OF VARIATION	DF	SUM OF SQUARES	MEAN SQUARE	F	SIGNIFICANCE OF F
COVARIATES	2	28.741	14.370	2.268	0.107
NORMAL	1	6.340	6.340	1.000	0.321
CCS3	1	17.268	17.268	2.725	0.098
MAIN EFFECTS	8	39.666	4.958	0.782	0.999
CSEX	1	4.477	4.477	0.707	0.999
PL	7	32.351	4.622	0.729	0.999
2-WAY INTERACTIONS	7	88.026	12.575	1.985	0.066
CSEX PL	7	88.026	12.575	1.985	0.066
EXPLAINED	17	156.433	9.202	1.452	0.132
RESIDUAL	88	557.615	6.337		
TOTAL	105	714.047	6.800		

COVARIATE	BETA
NORMAL	-0.033
CCS3	-0.016

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